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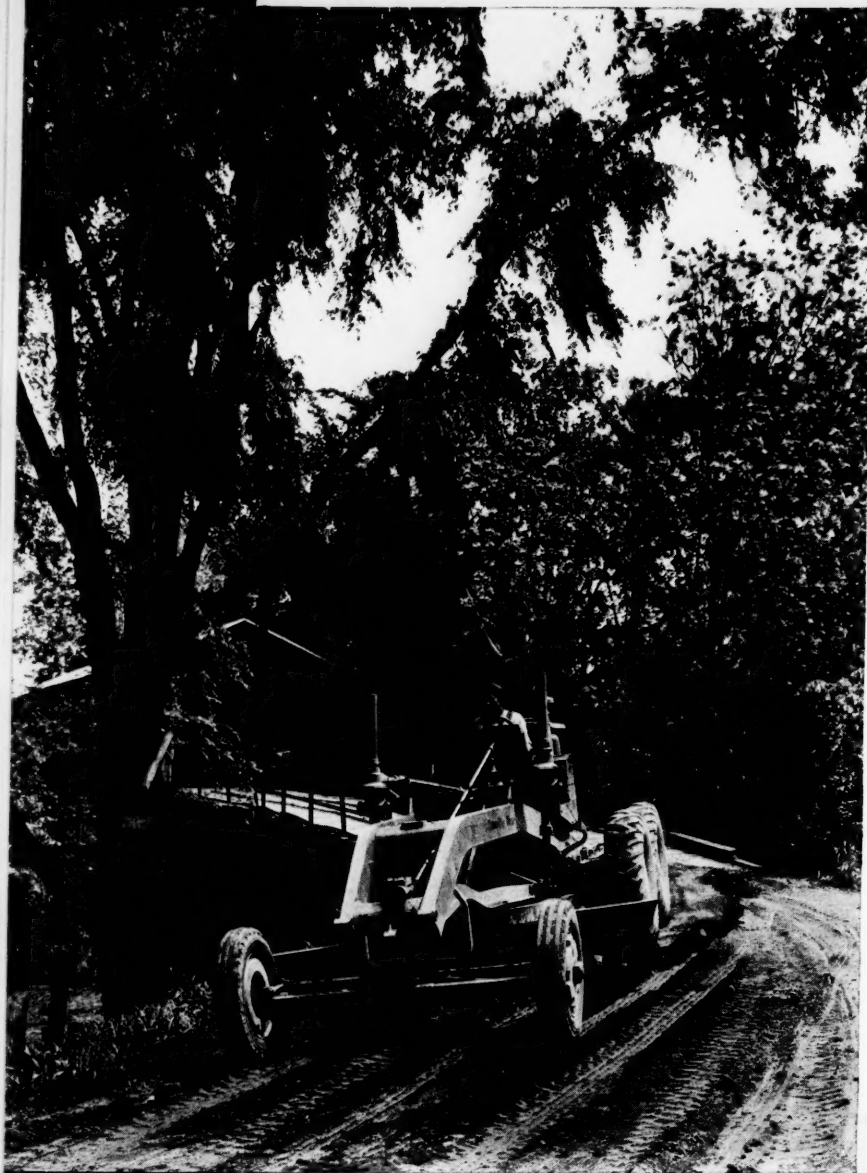
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NOVEMBER, 1937



GEORGIA PEACH



SIXTEEN miles of Bartow County, Georgia, roads are maintained every 10-hour day by the county's "Caterpillar" Diesel Auto Patrol. Low-pressure tires on tandem-drive afford ample traction for the hills and mud. It's fast on the blading . . . sure and accurate on the ditch-pulling. Inexpensive to operate and maintain.

Contractors, counties, and states are lowering road-construction and maintenance-costs all along the line with "Caterpillar" Diesel equipment.

CATERPILLAR TRACTOR CO. PEORIA, ILL.

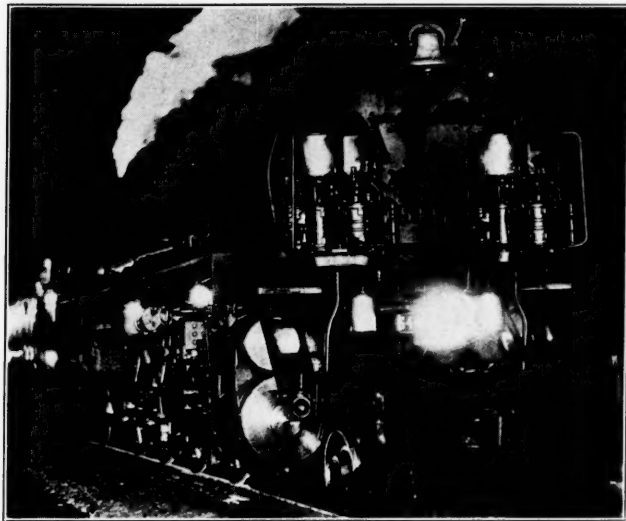
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**WORLD'S LARGEST MANUFACTURER OF DIESEL ENGINES,
TRACK-TYPE TRACTORS AND ROAD MACHINERY**

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**NOVEMBER
1937**

Volume CVI No. 11



"George Washington" of Chesapeake & Ohio Railway

MANUFACTURERS RECORD

Devoted to the Upbuilding of the
Nation Through the Development
of the South and Southwest as the
Nation's Greatest Material Asset

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NOVEMBER NINETEEN THIRTY-SEVEN

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COVER ILLUSTRATION—Photo by H. W. Fechner of R. I. Nesmith
& Associates



Sales Efforts Bear Fruit in TEXAS

IT'S market-time in Texas all year long. Volume and variety of crops keep a constant procession of products rolling to market, and money rolling into Texas.

Texas sends to the marts of the world huge shipments of grapefruit, oranges, tomatoes, potatoes, onions, spinach, cabbage, peanuts, peaches and pecans. From these and other fruit and vegetable crops Texas farmers gain an annual income of over \$33,000,000—but fruit and vegetable growing is only a small part of Texas agriculture. Cotton, rice, barley, wheat, corn, sugar cane and grain sorghum are other large and important crops that contribute to the prosperity of this great Texas industry.

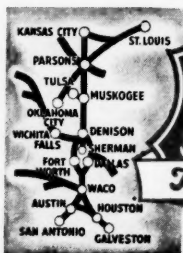
Although it is one of the leading agricultural states, with a total farm income in 1936 of \$619,442,000, Texas is far from a "one industry" state. Cattle raising, sheep raising, petroleum production, sulphur mining, timber milling and manufacturing are a few of the many big industries that make Texas a lively market and

a profitable place to direct sales efforts.

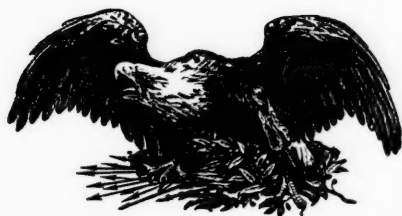
To expanding industries Texas offers many attractive advantages. Abundant raw materials, low-cost fuel readily available, favorable labor conditions, low living costs and a rapidly growing population make Texas a particularly profitable field for business activity.

Here, in Texas and the Southwest, is the nation's last great frontier where hundreds of thousands of families may find new and greater opportunity. The Katy, which serves the principal cities of the Southwest with thoroughly modern passenger and freight service, is proud of the part it is playing in the development of Texas.

As part of its progressive and constructive policy the Katy maintains an Industrial Department which will supply definite information about opportunities in Texas. Address the Industrial Development Department, Missouri-Kansas-Texas Lines, St. Louis, Mo., or Dallas, Texas.



PIONEER RAILROAD OF THE SOUTHWEST



THE "MUST" WAGE AND HOUR BILL

*A*t the special session of Congress the Wage and Hour Bill will be up for consideration as "must" legislation. In his radio address of October 12 the President asserted that higher wages and shorter hours should produce greater sales volume, and thus permit industry to absorb higher labor costs without imposing higher prices on the consumer.

The business South is emphatically protesting the passage of the Wage and Hour Bill, which it regards as a dire threat to Southern industry.

In another column we are printing letters from Southern business men expressing their opinions of the measure which probably a majority of the business leaders of the South believe will be disastrous to the enterprises under their charge.

The bill places in the hands of a regulatory body, control over the maximum length of time a man shall work, and the minimum pay he shall receive for it. While the revised bill, which was before the last session and was passed on by the Senate, differed from the original draft, it exercises political control over private enterprise to a degree that is virtually the power of life and death.

The South sees in it the wiping out of the wage differential which heretofore has been regarded as fair and just in view of cheaper living conditions in the Southern states, but aside from this valid objection business men here are opposed in principle to the hand of government constantly being laid upon private enterprise.

As these letters point out, the Wage and Hour Bill will lead to unemployment instead of the reverse. It will hamper investment and expansion, just as does the surplus profits tax. It is a false economy to clog business by punitive legislation and then expect it to progress and flourish so that it can pay more taxes and give more employment. There is no adequate reason, when business is struggling to lift its head, for the passage of laws that impede progress. The business enterprises of America are eager to go forward in filling the demands for goods and service which the country needs.

While the government's income from taxes has been declining, it will increase under different conditions. American progress depends upon private enterprise. Why thwart it? Why let brain-trust theorists, who have never conducted a successful enterprise, be permitted to dictate legislation and write new laws regulating business when the country now, of all times, needs sober judgment and experience?

As we see it—

The Railroad Problem

We are discussing elsewhere in this month's MANUFACTURERS RECORD the situation confronting the railroads, which are our main transportation reliance.

In spite of the difficulties of recent years, the carriers have provided improved facilities for passenger comfort, while freight service has been brought to a point of reliability and speed never before attained. Corrective legislation is needed to reduce the bill the roads are paying so that service may be further improved, and stockholders have at least some return on their investment.

The facts given in the articles we are printing are worthy of thoughtful consideration.

The alternative of private ownership and management is government ownership and management, and that shadow is more prominently in the foreground of the picture than most business men would like to have it.

As the search for economies in operation has gone on (and the situation of the roads today would be much worse except for economies achieved), costs of operation over which they have had no control have risen steadily. This has been due not alone to the higher prices for commodities, of which the railroads are the country's largest buyers, but to higher wage rates and taxes.

J. J. Pelley, President of the Association of American Railroads, said in discussing the recent increase in freight rates granted on certain commodities: "I can see no escape from the necessity for additional railroad revenues, beyond the increase in rates just granted, if we are to carry the added costs already upon us. Since 1933 our tax burdens, due to new laws, have gone up about 23 per cent. * * * On the other hand, our average revenue for hauling a ton of freight one mile has gone down since the beginning of 1933 by 10 per cent, and our average passenger revenue per mile by a similar percentage."

Since 1923 the railroads have spent nearly \$8,000,000,000 for equipment and improved facilities. Their purchases include more than 60,000 different items.

Bills now pending in Congress, it is estimated, would increase the cost of railway operation by \$750,000,000 a year on the basis of 1930 traffic. They include the train limit bill, excess crew bill, and six-hour day bill.

Regardless of any mistakes of the past, the present situation demands correction. It is an immediate problem.

The Interstate Commerce Commission has granted permission for most of the increases in freight rates requested by the roads, although some rates were denied and others modified. The allowance was granted to offset in some degree previous emergency freight charges for which permission had expired. The Commission has indicated its willingness to entertain application for increases on other commodities not

included in the present order. Opinion is expressed by railroad heads that even with the addition of these increases, there is not nearly enough revenue to meet increased expenses.

Of Particular Interest

In calling Congress together in special session, the President has designated other legislation besides the Wage and Hour bill as of immediate importance. There is the bill providing for so-called regional planning agencies, otherwise and perhaps more accurately described as "7 little TVA's"; also, there is the farm program and crop control to be considered on new lines in view of the previous AAA being barred; the reorganization bill dealing with the government, and, while it is not immediate, the intention has been expressed to have the Sherman Anti-trust law operate more actively.

It will probably be impossible for Congress to reach conclusions on all of these measures at the special session, and it is a matter of doubt as to how soon they can be acted upon in the regular session.

The Wage and Hour bill will meet obstacles at the start, not only because of the declared opposition on the part of house leaders, and particularly Southern representatives, but the opinions expressed by labor leaders in opposition to it. In many quarters it is doubted that the Wage and Hour bill will get any further toward passage, without drastic change, than it did at the last session of Congress.

The little TVA's will meet with definite and prolonged opposition. It is doubtful if there is any popular sentiment in favor of further expenditures in this direction. It is still to be demonstrated that the TVA has accomplished results commensurate with the vast outlay entailed, to say nothing of the effect the establishment of such a governmental enterprise has upon private industry.

The matter of governmental reorganization may have better sailing, but in view of the probable adverse effect upon business of the effort to search out and try any considerable number of alleged violators of the anti-trust law, it will be doubtful if this is finally decided to be a matter for immediate action. It is being pressed home more and more upon the administration by business interests the country over that the state of affairs demands business shall be given a real breathing spell.

South Diversifies Its Farming

Encouraging figures covering diversification of crops in the South are contained in the Department of Agriculture's general crop report just issued. Able to produce in abundance every necessary food product, the South too long has been a buyer instead of a producer. The major part of the attention of Southern farmers has been given to raising cotton.

As we see it—

(Continued)

The figures of wheat production in the report cover 13 states of the South. In those states the expected yield shows an increase of 45,000,000 bushels over the average of 1923-32, compared to an estimated decline of 25,000,000 bushels in wheat production for the remainder of the country. Missouri, Georgia and Tennessee, it is expected, will more than double their crops compared with the average for the years given, while Arkansas and Kentucky will triple theirs. All of the Southern states reporting show increases.

Oats show an increase of 11,000,000 bushels, with Louisiana in the lead, having tripled its production. The country as a whole, according to the report, shows a decline of 62,000,000 bushels.

In barley, Missouri expects a crop five times as large as the 1923-32 average, and practically double the 1936 crop.

Other crops indicate similar increases, which are in advance of their proportion to the remainder of the country.

Food for humans, grasses and grain for cattle, and hogs raised at home instead of being bought from outside will lead to an agricultural economy with prosperity for all classes. It is desirable from every standpoint to provide at home for the food needs of an increasing industrial army whose face is set toward the South.

The figures given above are not huge as total crops are reckoned, but they show a sustained trend in the right direction.

Labor Costs Restrict Output

Clayton R. Burt, President of the National Machine Tool Builders' Association, said at the Association's 36th convention that the administration "has made American business reluctant partners in some unusual experiments." It is all right to talk about distributing more goods, but they must be produced first, and there must not be continuous restrictions placed on output.

In discussing the tax on undistributed earnings, Mr. Burt said: "The acknowledged purpose of the tax is to force a distribution of earnings as well as provide revenue for the government. This is based on a misconception of the term profits, which are considered by the proponents as all income in excess of current expenses, and as being available for dividends or taxes, while looking with suspicion upon reserves. Those who were responsible for this law were not fully informed of the importance of corporate reserves to the country during the years of 1930 to 1934. During these years, when the government spent \$8,000,000,000 in an effort to restore a normal balance, corporations spent over \$18,000,000,000 more than they received."

The MANUFACTURERS RECORD has repeatedly called attention to the part that industry took in trying to bring back a normal condition of affairs when unemployment was at its peak and shops were kept open

for the major purpose, in many instances, of giving employment and that alone, although figures were constantly in the red and surpluses were being drawn down to a vanishing point.

Walter Lippmann gave it as his opinion in a recent article that it is the President's conviction that "it is his historic mission to master the capitalists by squeezing them between a powerful organized labor movement on the one side and a very powerful government on the other."

If the country is to resume any normal degree of activity, labor must soon recognize that its demands are exorbitant and as a matter of fact, by reason of these demands, employment of labor has already reached a point of diminishing returns. Men are being laid off in various industries because of the lack of demand for commodities and products at existing prices, raised because of higher labor costs.

Current Business Signs

After a serious decline in the security market last month, shares later rebounded and a part of the loss was recovered. While production has slowed down to some extent, there appeared nothing in the business news to warrant the sacrifice of values that took place.

As we said in this column a month ago, farm income will be higher than for some time. Present estimates indicate \$9,000,000,000 as the figure, and that is a lot of money and a large part of it will go into trade channels.

Credit conditions continue favorable and money rates low. Construction work is not as active as it should be but in view of the great shortage of houses, it is quite probable that the demand, notwithstanding higher prices of labor, will soon be felt in increased building operations. The shortage of homes is increasing and before long will become a pressing need.

It is true that legislation which is threatened discourages business, but on the other hand it is extremely doubtful if there will be many more resettlement projects, and the word has already gone out that more careful scrutiny will be given to proposals for more public building. Less money is being spent for relief, and there is evidence that the urge for a balanced budget is making itself felt at Washington.

A lot of productive effort will be required for a long time to come to fill the needs of our own domestic market.

The outlook for business generally is about the same as it has been for some months past. The downward trend since spring has been disappointing but no material change either up or down is expected. Most observers look for some improvement during the coming year. It all depends on what Washington does or, rather, does not do. The attitude of business is still one of cautious waiting.

The Present Situation of the Railroads

SOME time ago the Chairman of the Reconstruction Finance Corporation, Mr. Jesse Jones, paid this tribute to the nation's railroads:

I know of no other big industry which could have seen its revenues dwindle to half their former volume, and still keep on going as have the railroads. The managements of American lines have surmounted tremendous obstacles. They have been loaded with a heavy tax burden. They were able to reduce wages only slightly and that reduction was only temporary. They have been subject to a greater degree of public regulation than any other type of industry. And they have had to cut rates. Despite these things, the railroads in general have come through the depression in good shape and are now definitely on the upgrade. I think they deserve a lot of credit.

What Mr. Jones said of the railroads a few months ago was true then. Has anything happened since to change the picture? Let us see what the situation is.

Recent economic and political developments have again focused public attention upon the railroads. While the railroad industry is generally recognized as a fundamental part of the economic structure of the country, it is sometimes contended that rail transportation is destined to give way to other agencies of transportation. It is true that competitive agencies have grown rapidly in recent years. But they cannot, now or in the future, take the place of rail transport. A moment's reflection upon the present congestion of main highways and upon the inadequacies of our rivers and canals, will indicate clearly that our railroads will continue to dominate the commercial freight and passenger business of the future.

<i>During 1936 Class I Railroad Expenditure Included</i>	
Wages	\$1,848,635,804
Taxes	319,752,721
Fuel	272,270,000
Other Materials and Supplies	531,151,000
Capital Expenditures	
New Equipment	159,104,000
Roadway	139,887,000
Interest on Funded Debt	458,896,739
Funded Debt Outstanding	\$10,022,728,813

The ability of the railroad industry to meet the nation's demands for efficient transportation service depends in great measure on mechanical fitness and the scientific use of railway facilities. The railroads of the country are today geared to the fast tempo of a modern age. Individually and collectively, they are applying scientific principles to railway performance. Efficiency and safety of rail operations were at a peak at the beginning of the depression in 1929. The same excellence has been maintained, and even improved, through the depression years. Through the Association of American Railroads, the railroads are pledged to continue their work in the field of research and experimentation, in order to secure the utmost safety and operating efficiency of rail transport.

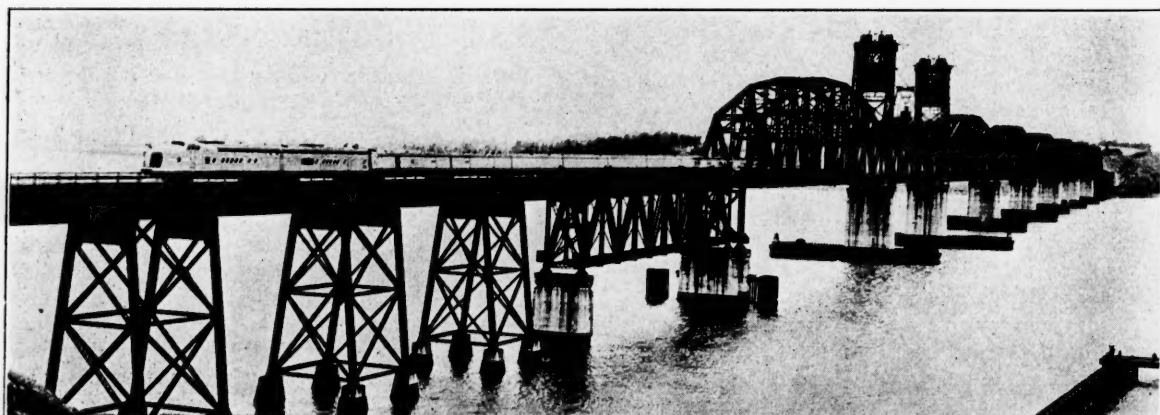
Some of the more important problems recently studied by railway research organizations are: the chemical treatment of water for locomotive use, timber preservation, fuel conservation, a new type of freight car coupler, improved air brakes and draft gears, improved processes of rail manufacture, standardized

box car design, air conditioning, interior designs for all types of passenger equipment, and wind tunnel tests for streamlined trains. As a result of these investigations, upon which many millions of dollars have been spent, and the constant efforts of railroad managers to maintain a high state of efficiency, the people of America today are being provided with the cheapest, safest and most dependable rail transportation to be found in any country.

Here are some accomplishments of our railroads today:

1. The American railways and the Pullman Company have air-conditioned more than 9,300 passenger cars, at a cost of approximately \$50,000,000.
2. Streamlined trains are operated in 30 of the 48 states.
3. There are more than 650 daily passenger trains operating on mile a minute schedules in the United States.
4. Along with the improvements in passenger equipment and services, railway passenger fares have been reduced substantially. A dollar spent for passenger travel in 1936 carried the average passenger 54 miles as compared with 35 miles in 1928. This reduction of 35

Southern Pacific Railroad's "City of San Francisco" crossing the Suisan-Benicia double-track bridge



per cent in the average revenue per passenger-mile saved the traveling public 224 million dollars last year.

5. Not a passenger was killed in a train accident in the first six months of 1937.

6. The railroads installed 56,307 new freight cars, 269 new steam locomotives, and 47 new electric and Diesel locomotives in the first nine months of 1937.

7. Many freight trains are being operated with the regularity and dependability of passenger trains, and in many cases almost as fast. Due to the speeding up of freight service, many communities throughout the United States now enjoy overnight service from points as far as 500 miles distant.

8. The average speed of freight trains between terminals is now more than 50 per cent higher than it was in 1920. For today's improved freight service, the American railways receive less than the price of a post card, on the average, for hauling a ton of freight one mile.

So much for the services from which the public is receiving daily benefits.

The question is often asked: "How has it been possible for the railroads to spend huge sums to air-condition their passenger trains, to modernize their equipment, to give the public streamlined trains, to offer free pick-up and delivery service, and otherwise improve their services, and at the same time substantially reduce their passenger fares and freight rates?"

The answer is that these improvements in service and reductions in rates and fares have been made possible by a policy of spending money to save money. Economies and efficiency in operation depend largely upon constant improvement of the transportation plant, requiring in turn a liberal investment of new capital. The roads have spent vast sums in recent years for the improvement of plant facilities and equipment. These expenditures are producing excellent results. Improvements in the design and construction of locomotives, with better utilization of locomotive fuel, represent an annual saving for all the railroads of 19 million tons of coal, the equivalent of 43 million dollars. The average tractive effort of the steam locomotive has in-



Streamlined electric locomotives awaiting finishing

creased 35 per cent since 1920, but fuel consumption in freight service, per 1,000 gross ton-miles, decreased 31 per cent in the same period. In passenger service, fuel consumption per car-mile decreased 19 per cent.

Furthermore, the nation's rail lines have made marvelous strides in the direction of operating economy and efficiency by reducing the unit cost of transportation (equivalent to moving a ton of freight one mile) by approximately 41 per cent in the last sixteen years. That means that, if the freight traffic handled by the railroads in 1936 had been moved at the same average cost per ton-mile as in 1920, it would have required \$1,486,000,000 more than it did to move the 1936 traffic. It is interesting to note, too, that if the 1936 traffic had been moved with the average receipts per ton-mile prevailing in 1921, railway earnings would have been greater by more than \$1,022,000,000. Regardless of the causes for this drop in ton-mile revenue, the fact remains that lower average revenue has been one of the major problems with which the railroads have had to contend. They met this

problem courageously by effecting economies and reducing costs, and the public has been the chief beneficiary of this program of efficiency and economy.

These improvements and economies have *not* been accomplished at the expense of labor. There has been no reduction in the wage level of railway employees. In fact, the average hourly earnings of railway employees are now the highest they have ever been, and they have just been raised still higher by wage increases which will cost the carriers \$137,500,000 a year.

These improvements have been brought about by increasing the capacity and efficiency of the railway plant, by increasing the tractive power of locomotives and the capacity of freight cars, by the installation of modern machines, and the development of more efficient methods in the maintenance of track and equipment. All this has cost money, but the results have justified the expense.

Yet, in spite of this great record, the railroads today are being threatened from every side. Increased and new

(Continued on page 72)

Laying one-length welded rail





New Uses for Cotton

BY

Charles K. Everett

Manager, New Uses Section, Cotton Textile Institute

CERTAINTY of a near-record cotton crop, exceeding 17,500,000 bales, has focused attention on the problem of stimulating cotton consumption and on the progress made toward solution of that problem.

Fortunately for the 12,000,000 or 13,000,000 Americans dependent on the growing, manufacture and distribution of the fiber, it did not take official pre-

dictions of a bumper crop to spur the cotton industry into an intensified program for the expansion of existing markets and the development of new outlets for cotton.

Probably no other American industry has devoted itself more vigorously or effectively to the extension of the usefulness of its products than has the cotton-textile industry during the last decade. To those efforts may be credited some truly remarkable achievements—the acceptance by the consuming public of cotton's commanding position in both apparel and household uses fields and

the opening of vast new markets by the recognition of its practicability as a road and house building material, to mention only a few developments of tremendous importance in terms of increased consumption.

But even before the current crop loomed, it was realized that neither the efforts nor the results were enough. Foreign markets for raw cotton were contracting and overseas outlets for cotton goods had dwindled almost to the vanishing point. Cotton's domestic markets were besieged only by low-cost foreign textiles but by an increasing host of competitive fibers or substitute products.

It was no longer a problem only for the cotton mills who for ten years, through the Cotton-Textile Institute, had carried on the fight. It was a challenge to the whole industry from grower to mill selling agent and out of the industry-wide recognition of that challenge grew the Institute's "cent-a-bale" cotton promotional program now under way.

As a result, when the recent estimates promised a crop of wholly unexpected proportions, the cotton industry was not merely *stripped for action*—it was *in action* on every front that holds any promise of extended or new markets for cotton goods. With the list growing every day, the cooperative cotton promotional program now musters more than 300 cot-

(Continued on page 66)



Left—Cotton awaiting shipment. Above—A load of cotton being shipped downstream

Photos by courtesy U. S. Dept. of Agriculture.

THE WAGE AND HOUR BILL

A Threat to Industry

Southern Employers see disastrous consequences from a regulatory measure that will hamper production and decrease employment

Unworkable

The wage and hour legislation scheduled to come before the special session of Congress will undoubtedly be considered along the lines of the so-called Black-Connery Bill, which embodies many of the principles of NRA which were found to be alike unworkable and unconstitutional. This bill as drawn is even more objectionable and unworkable. Sectional controversies would be aroused which would adversely affect both industry and labor, with possibly increased unemployment resulting. This particularly applies to Southern industry, now making notable strides.

At a time when recovery progress toward normalcy is under way such legislation engenders uncertainty and would retard normal progress. Its enactment would mean higher production costs, which would be reflected in increased prices to the consuming public.

Legislation controlling the Governmental expenditures to conform to its receipts is much more important at present.

ROBERT J. MEYBIN, V. Pres. & Gen. Man.
VIRGINIA BRIDGE COMPANY,
Roanoke, Va.

Must Be Defeated

The Wage and Hour Bill is by far the most radical and unwise piece of legislation yet proposed. Aside from the fact that its objectives strike at the very foundations of our form of government, its enactment will have a disastrous effect upon the economic structure of the nation, and particularly of the South. Since the dark days of Reconstruction following the Civil War the South has had a difficult struggle to obtain markets for its goods. Only by differentials in wages dictated by lower living costs has southern industry been able to compete with northern and eastern industries in the major markets of the country. This bill seeks to destroy these natural and only advantages of the South.

The farmers may be the heaviest losers in this program to arbitrarily fix wages and hours. Should this bill become law, every farmer will be paying increased prices for what he purchases. The cost of fertilizer, farming implements, cloth-

ing and other things the farmer must buy will rise so rapidly that the existing disparity between the prices of agricultural products and those of industry will be further broadened.

The bill's passage will mean economic suicide to the South and it must be defeated. There is no room for compromise.

R. I. INGALLS, Pres.
INGALLS IRON WORKS,
Birmingham, Ala.

Will Destroy Freedom

I cannot approve of any legislation which aims to destroy freedom and liberties granted under our Constitution. The Wage and Hour Bill, I think, will do exactly this. The bill places complete authority in the hands of the Executive Branch without providing a check by the Legislative group. Herein lies the danger that it might be used as a political weapon. It is obvious that this can result in destruction of our political liberty.

The bill would further prohibit appeal to the Courts from findings made by the Board if there was the slightest evidence to support the Board's findings. Here, I say, is destruction of our judicial freedom.

I firmly believe that passage of the Wage and Hour bill paves the way for an autocratic form of government.

I sincerely hope that this bill does not pass in the coming session of Congress.

J. S. FOLEY, Pres.
BROOKS-SCANLON CORPORATION,
Foley, Fla.

Would Spell Ruin

We feel that a national uniform wages and hour law would work untold hardship and losses on practically every southern manufacturer.

The costs of living in the south are considerably under those of the north, due to cheaper food, housing, less fuel, etc.

We also feel that there must be some differentiation between whites and negroes or chaos will surely result.

The workers in the south, as a whole,

are not as efficient as those in the north and the advantages that the north has in mass production and lower freight rates would spell ruin to most southern manufacturers with such a law.

GEO. A. MERCER, JR., V. Pres.
THE STEEL PRODUCTS CO., INC.,
Savannah, Ga.

Entirely Unsound

We are not operating, and we have no plans to resume during existing conditions. Certainly we will not do so pending enactment of legislation of this nature, the law to be administered by a politically appointed Board.

We feel that the principle involved in such proceedings is entirely unsound, that such a law would be largely unworkable, that its effect upon the industrial development of the South will be disastrous, and that any who favor such legislation in the expectation of being benefited directly by its provisions, are doomed to a sad disappointment as time goes on.

We sincerely hope the Congress will refuse to enact any bill of this character, and we now believe that will be the outcome.

J. H. EDDY, Man.
KAUL LUMBER COMPANY,
Birmingham, Ala.

One Immediate Effect

Much has been said about the theoretical benefits which will result from the enactment of this legislation. They may prove to have some merit but, in my opinion, the theory of scarcity and higher prices cannot be applied to labor any more than it can to agriculture with the result of raising the standard of living on a long term basis.

We, in the South, are not facing theory in this legislation. We are facing facts that will cause a cruel awakening. I will give you one practical and immediate effect that this proposed legislation will have in our business. Not in months or weeks after the law becomes operative but in hours. We employ 300 negro women at wages comparable to those paid domestic servants in our city. We have in

(Continued on page 70)

The Menace of Soil Erosion and What Must be Done

Man's failure to adjust himself to nature's forces in preventing soil erosion has resulted in an irreparable loss of assets. When the question was first raised about 75 years ago of whether the United States is a permanent country, it was regarded as utterly fantastic, but events since then more than justify the original query.

In spite of the fact that precedent existed in the Orient and elsewhere of large tracts of land almost entirely bare of soil for many years, upon which ruins stand attesting to former flourishing communities, this country failed to heed the warning of engineers and others who pointed to the danger of soil erosion. As a consequence as recent surveys indicate, within another century these United States may become inade-

quate to support the population if the present rate of erosion is permitted to continue unchecked.

Theodore Roosevelt in 1908 said: "When the soil is gone, men must go; and the process does not take long." The legitimacy of the statement has been substantiated by Professor T. C. Chamberlin who estimated that the slow formation of soil is about one foot in 10,000 years or 40,000 years for the formation of sufficient soil to be a good productive one.

With our total national area of 1,903,176,620 acres, exclusive of large cities and water, representing 100%, no less than 45% has been affected by erosion. Of this amount 34.8% has lost from one-fourth to three-fourths of the top soil and over 10% has lost all top

soil and some sub-soil.

Perhaps the most discouraging feature of soil erosion is the prevalence of what is technically called sheet washing, the reason for which is the extensiveness of rolling country lacking crop protection and frequently comprised of clay, silt or similar surface soils that cause above-normal rainfall to wash over the surface carrying small particles of soil along. This is not very noticeable or if noticeable at all is usually disregarded until gullies appear to interfere with cultivation.

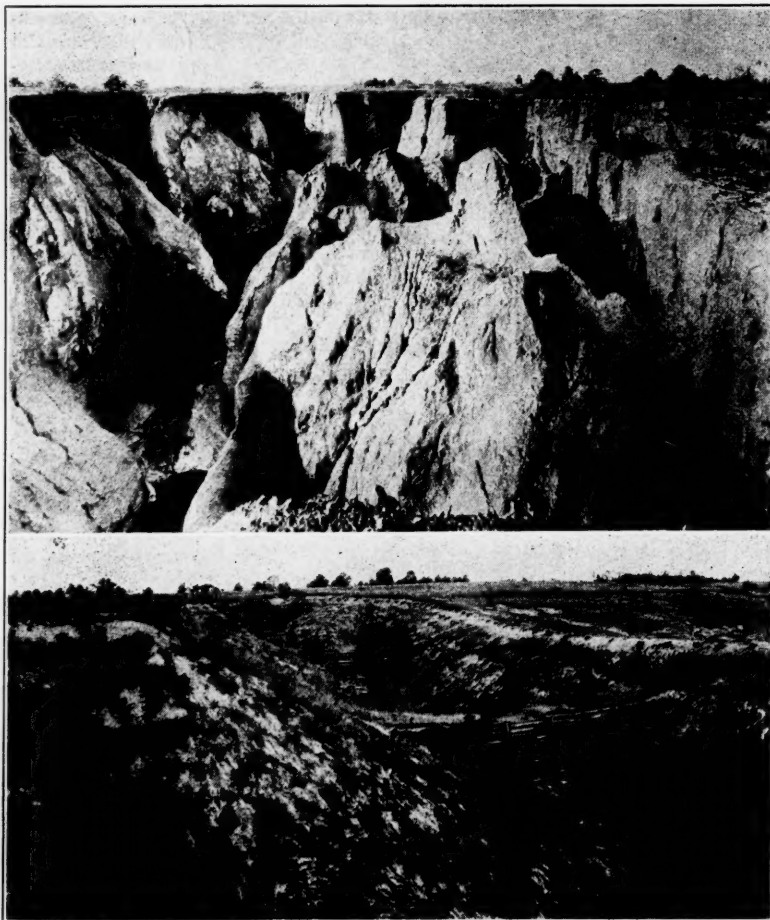
The Mississippi river is believed to carry about 430,000,000 tons of sediment into the Gulf of Mexico each year, or a surface soil equivalent to 429,000 acres.

A total approaching one billion tons each year is the present estimated loss of soil in the United States, equal to seven inches of surface soil over an area of 1,000,000 acres of land through removal to the ocean alone, while the amount removed beyond redemption by various agents is about three billion tons annually, the valuation of which is placed at \$400,000,000.

Not less than 100,000,000 acres of once fertile farm land have been essentially destroyed for profitable farming with the percentage steadily increasing each year. Another 125,000,000 acres are dangerously impaired and still another 100,000,000 are threatened. The cumulative loss to date exceeds ten billion dollars and in 50 years from now if the waste is not stopped the sum will have reached the incredible figure of 25 to 30 billion dollars.

For some decades to come the loss of soil nutrients can be replaced with the large domestic and foreign deposits of phosphorus and potash, and with nitrogen and industrial wastes, but the loss of soil is reasonably permanent.

Erosion is as widespread as man's attempts at exploitation of land and every state is affected to a greater or lesser degree. Among the Southern states giving earnest attention to the seriousness of the problem are Alabama, Georgia, Mississippi, Missouri and Oklahoma, while the extent to which Texas realizes its importance is indicated by the fact



Above—Gully erosion in S. C., where over 40,000 tons washed away in 8 years. Below—Same gully after control by sloping the banks, building of dams and planting of trees, etc.

that over six million acres have been terraced to control further devastation.

From a recent publication of the University of Kentucky College of Agriculture dealing with soil erosion and its control, it appears that Kentucky's loss is proportionate to that of the United States as a whole. With approximately 3,500,000 acres given over to corn, tobacco and similar crops which leave the land exposed after harvesting, the damage done by rains to the vast rolling area will, in only a few years be very serious, since it is estimated that not above 10% of the summer crop land is provided with winter crop protection.

In Missouri, according to a publication of the Soil Conservation Service, more than three-quarters of the state's soil have lost one-quarter of their former surface soil fertility and of the 20,850,000,000 tons or more of soil that have been removed, 26 million tons of nitrogen, 13 million tons of phosphorus and 300 million tons of potassium have been lost.

Control of Soil Erosion

There is an ironic anomaly in connection with most soil erosion and its control. Though water is a prime cause of erosion, its preservation is fundamental in the control thereof, for while it is true man cannot outlive the soil, soil cannot live without adequate water.

Nature in the raw, with an almost perfect balance between soil, climate and surface contour on the one hand and plants and animals on the other, provides a means of retaining the all important ground supply of water. Consequently when the white man exploited the land for existence and gain, and failed to replace those natural resources he removed, or supply substitutes, erosion occurred. Therefore control consists of aiming at certain essential things as an effort to reestablish nature's normal accommodation of water.

This can best be accomplished with crop rotation and prevention of land remaining fallow throughout the winter and other rainy periods; with correct methods of plowing and cultivation of generally tilled and grazing lands and with reforestation, all of which will aid in absorption and infiltration as opposed to expulsion of rain and snow. Other means of control require the harnessing of waters to reduce their rapid flow by check dams and similar engineering devices.

Top—Gully erosion, Floyd Co., Ga. Erosion of cultivated land by sheet-washing. Stripcrop of corn and tobacco, terraces seeded to lespedeza, Guilford Co., Tex. Contour rows of corn and peas, terraces planted to maize

Photos by courtesy U. S. Soil Conservation Service.



Younger Men Head U.S. Steel

THE resignation of Myron C. Taylor and William A. Irvin, from the chairmanship and presidency, respectively, of the U. S. Steel Corporation is particularly significant because the administration of the world's largest producer of steel will now be placed in the hands of Edward R. Stettinius, Jr., 37 years old and Benjamin F. Fairless—47. These younger men bring to their tasks not only the necessary experience gained from important executive work done previously, but they have the advantage of youth, in the one case being 25 years younger than the man he succeeds and the other 15 years, in favor of the new incumbent.

Stettinius is known to his friends as a man of action, accomplishment and of splendid physical health and there is no doubt of his capacity to fill successfully the important executive post for which he has been chosen.

Edward R. Stettinius, Jr.

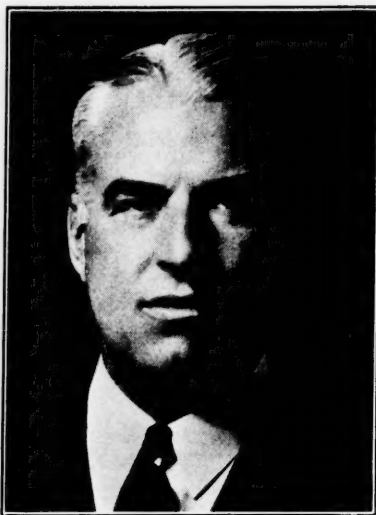
Graduated from the University of Virginia in 1923, Stettinius joined the Hyatt Rolling Bearing Company, a subsidiary of General Motors, and in 1926 was made assistant to John L. Pratt, vice president. In 1930 Stettinius became Assistant to the president and in May, 1931, was elected vice president. Three years later, he was called to U. S. Steel as vice chairman of the Finance Committee and less than two years after, took over the duties of director and chairman when Myron Taylor became Chairman of the Corporation.

An aviation enthusiast, the new chairman of U. S. Steel has been director and member of the executive committee of both North American Aviation and Transcontinental and Western Air Express and a director of Eastern Air Transport.

Benjamin F. Fairless

who succeeds the retiring 63-year old William A. Irvin as president of U. S. Steel has been associated with the steel industry for many years.

Born at Pigeon Run, Ohio, on May 3, 1890, he was one of four children whose coal miner father, unable to find school



Blank & Stoller

Edward R. Stettinius, Jr.

facilities at home, sent him at the age of five to be educated by his uncle and aunt, Mr. and Mrs. Jacob Fairless at Justus, Ohio, who later adopted him.

After teaching school for two years, he earned enough money to secure an education from the college which later honored him with the degree of Doctor of Civil Engineering.

His business career began in June, 1913, as a civil engineer for the Wheeling and Lake Erie Railroad. Shortly after he joined the Central Steel Company of Massillon and advanced from mill superintendent to vice president. In April 1930, Fairless was elected Executive Vice President of Republic Steel Corporation and in the autumn of 1935, following the merger of Carnegie and Illinois Steel, was offered the position of president of the Carnegie-Illinois Steel Corporation, which he accepted.

J. L. Perry

who succeeds Benjamin F. Fairless as president of the Carnegie-Illinois Steel Corporation has spent his entire business career connected with steel.

Educated in the public Schools of Worcester, Massachusetts, where he was born on March 11, 1881, Perry's first position was with the American Steel and Wire Company in his home town in 1899 and after occupying various positions became manager of the Worcester district for this company in 1928.

On January 1, 1933, he was promoted to the vice presidency of the same company in charge of operations with headquarters at Cleveland, where he remained until, in February 1935, he was elected president of the Tennessee Coal, Iron and Railroad Company of Birmingham.

Robert Gregg

who has occupied the position of vice president in charge of sales of the U. S. Steel Corporation since February 1935, will return as president of the Tennessee Coal, Iron & Railroad Company, the Southern subsidiary of U. S. Steel with which he was formerly associated.

Gregg, 52 years of age and a native of Atlanta, Georgia, was educated in the Atlanta Public Schools, Georgia School of Technology and graduated from Cornell University.

His first association with the steel industry was coincident with the start of his business career when he joined the staff of the Atlanta Steel Company of Georgia in August 1906 with which company and its successor, the Atlantic Steel Company, he continued and rapidly advanced to the presidency.

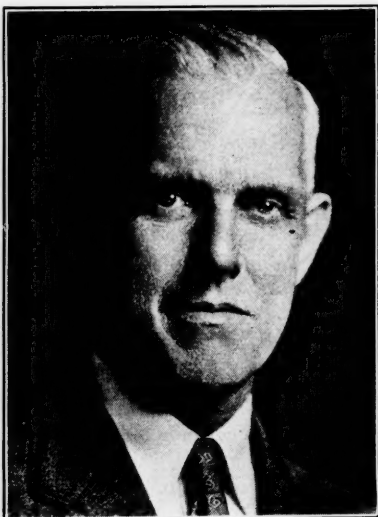
In 1932, he resigned from the Atlantic Steel Company to accept the position of vice president in charge of sales with the Tennessee Coal, Iron & Railroad Company and a year later was elevated to the position of President. Gregg's return to the Tennessee Coal, Iron and Railroad Co., which latter, except for the last three years, has been continuously headed by a native Southerner, will be welcomed by the South because of his previous record at Birmingham.

Benjamin F. Fairless



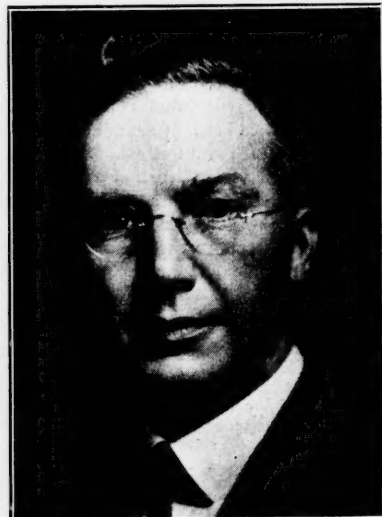
Bachrach

J. L. Perry



Blackstone Studios

Robert Gregg



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The Freight Rate Question

BY

J. B. Hill

*President, Louisville and Nashville
Railroad*



WHEN the Interstate Commerce Commission declined about a year ago to continue beyond December 31, 1936, the so-called emergency charges which the Commission had sometime prior thereto permitted to be superimposed on the then current rate structures, it invited the carriers to publish or to submit to it increased rates where, in the opinion of the carriers, the existing rates might be considered as too low and which might safely be imposed without checking the free movement of the traffic involved.

From time to time the carriers have proposed such advances—some the Commission has under consideration, others were permitted to go into operation. As none of them has been in effect very long and others are not yet in effect, no satisfactory estimate can be made of the amount of additional revenue that will ultimately be derived from these revisions; but it is a fact, nevertheless, that such are far from being adequate to offset the increased costs of railroad operation, hence it seems obvious that the industry will be compelled to ask for further increases in rates.

As a matter of fact, since the more prosperous years, there has been for one reason or another, a rather steady reduction in the freight rates due to readjustments found to have been necessary to satisfactorily move many items of traffic. In 1929, for instance, the Southern Group of railroads earned an average freight revenue per ton per mile of 1.11 cents, whereas in the year 1935 this average revenue was 1.052 cents.

The year 1936 yielded the Southern Group railroads, in round figures, \$500,000,000 of gross revenues from all sources, and \$80,000,000 net railway operating in-

come with which they had to pay fixed charges, interest, etc. The interest alone consumed in the neighborhood of \$70,000,000, leaving but \$10,000,000 available for dividends, reserves and the like.

The year 1936 was the best year since 1930; in fact, the Group failed to earn fixed charges during the five years of 1931 to 1935, inclusive, the aggregate deficit being approximately \$130,000,000.

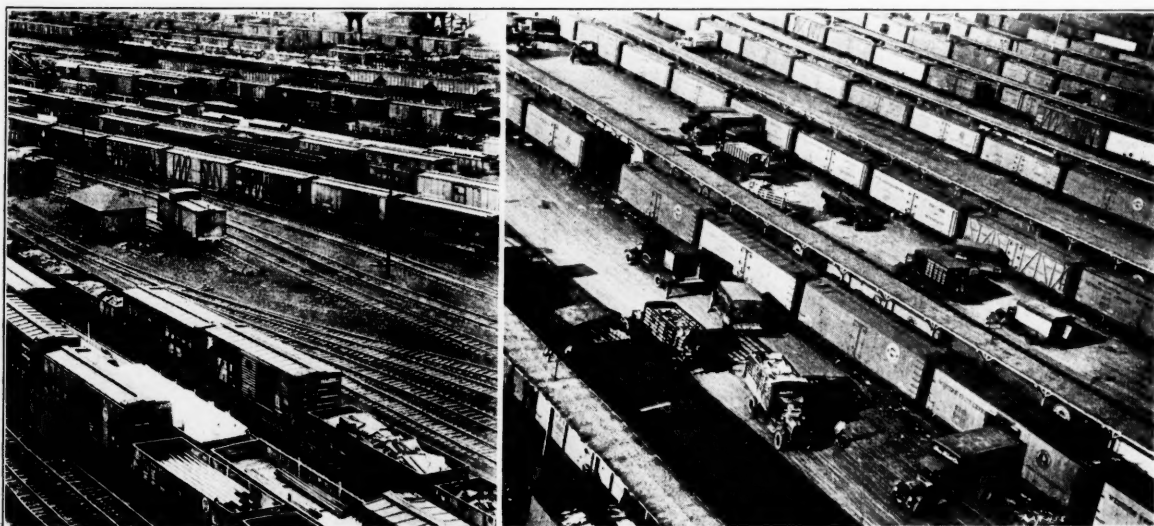
It must be remembered that the so-called emergency charges were in effect in 1936 and contributed around \$14,500,000 to the net. As stated, these charges were canceled with the end of the year,

Thus, notwithstanding business was on the upturn during 1936, the railroads in the South had such a thin margin between earnings and expenses and their fixed charges that the color (red or black) of the final figures was actually determined by the small increases obtained under the emergency charges tariff. Stated in another way, had the railroads been without the emergency charges their net would have been a deficit of \$4,500,000.

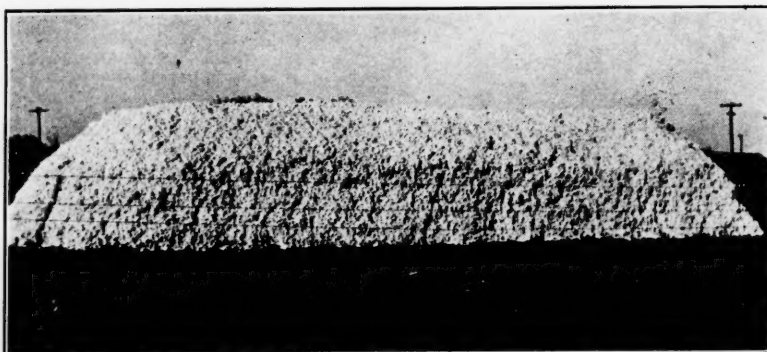
Since 1933 the expenses have been creeping up not only in volume but in unit costs. Of course, under such conditions there is no chance for the Southern railroads as a group being able to raise added capital needed for improving their plants. On the contrary, except that there should be an enormous increase in volume of business, they will not be able to make enough to pay the higher wages to the thousands of employees, the materially increased sums for fuels, lumber, ties, rails and the like (which expenses have to be met even if the plant is not to be improved), not to mention city, county, state and federal government taxes, including the new payroll taxes for social security, etc.

The restoration of the 10% wage deductions (the agreements dealing with such having expired) added about \$23,000,000 to the expenses of the Southern Group roads. The new payroll taxes at the present time amount to about \$13,000,000 annually. The wage increase recently agreed to for the non-operating forces will cost more than \$14,000,000 additional, while that to the operating forces will add another \$5,000,000. These roads are currently paying for fuels at the rate of about \$10,000,000 more annu-

(Continued on page 74)



The Outlook for Cottonseed Oil & Cottonseed



Photos on this page by courtesy U. S. Dept. of Agriculture.

BY

S. M. Harmon

Secretary, National Cottonseed Products Association, Inc.

Based on the probable yield of cotton this year, the oil mills throughout the South will have close to a record tonnage to handle between now and the end of the crushing season. It is interesting to note that during years of heavy production and extreme decline in prices of cottonseed, the percentage of the total production of seed which is crushed drops very materially. This does not mean that the seed are utilized otherwise, but that many producers and dealers in cottonseed carry over stocks into another season believing that prices will improve and that they can make a profit out of holding them.

The principal factors contributing to the low price are:

1. There were normal inventories of all kinds of fats and oils in the United States at the beginning of this season.
2. Production of a near-record cotton crop indicates that there will be heavy production of cottonseed oil and cottonseed cake.
3. Imports of flaxseed have been unusually heavy this year, which added to the production of concentrated feeds.
4. The soybean crop is close to the maximum that has been raised in this country, which will add to the supply of oil and concentrated feeds.
5. An increase of a billion bushels in corn production will no doubt cause a production of larger and heavier hogs during the next year. This will add to the production of lard.
6. Imports of lard have dropped during the past few years from an average of 600,000,000 pounds to something like 100,000,000 pounds. Owing to the cost of storing lard, and the loss of the export market, we will doubtless be confronted with a heavy pressure on the cottonseed oil price from lard within the next few months. Lard must be sold practically as produced, at whatever price the market will afford. On the other hand, refined cottonseed oil may be placed in storage and kept for quite a length of time without deterioration.

Costs of manufacture have come up, because of wage and tax increases, and because of the increase in the cost of the materials and supplies used in the manufacture of cottonseed products.

This appears to be one year when most of the mills will have a satisfactory volume of business, but the value of the products is such that the price of seed must be much lower than last year. This has caused a great deal of dissatisfaction among cotton growers, who claim to feel that reduced prices are a result of a combination among the oil mills designed to reduce prices.

Some politicians throughout the South take advantage of conditions which produced cheap cottonseed, and have fanned the prejudices of the producers by publicly stating that there exists a trust among the processors, despite the fact that they have no evidence, and doubtless they have no such opinion in the back of their minds.

Cheap cottonseed throughout the principal cotton producing area is tragic, because it affects the buying power of so many small farmers and tenant farmers. One of the problems of this industry is the psychology of this class of producers who really suffer from condi-

tions as they now exist. These small, and more or less improvident, farmers usually are forced to borrow money, or its equivalent for use in producing their cotton crop. Very often returns from the sale of their lint cotton are barely sufficient to pay advances made them by banks and other lending agencies. All crop mortgages throughout this area exempt cottonseed from their provisions in order that the producers may have the proceeds from the sale of the seed to use in having their cotton harvested and ginned. It is not infrequent that the sale of the seed brings to many small cotton farmers the only actual cash they handle during the year.

It is my opinion that the imposition by the Federal Government and by the Legislatures of many States of legislation which places a tax on the production and sale of margarine, limits the distribution of cottonseed oil, and therefore materially affects the price of cottonseed. Cottonseed oil has become the principal ingredient used in the manufacture of margarine, and it accounts for from 50 to 60 per cent of the value of a ton of cottonseed.

There are millions of consumers in this country whose budgets will not permit them to buy high priced butter, but who could buy a table spread made of domestic fats and oils churned in pasturized whole milk. It is the contention of this industry that the removal of all artificial restrictions against the production and sale of margarine will not materially affect the quantity of butter sold in this country. It is my opinion that if the manufacturers of butter would devote more time to producing a

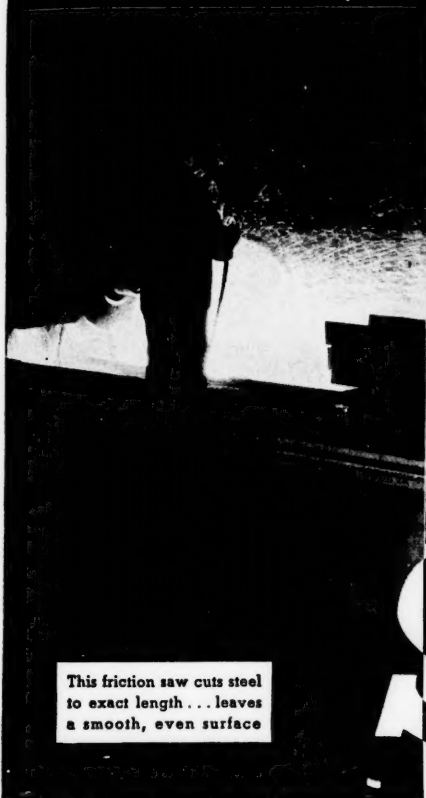
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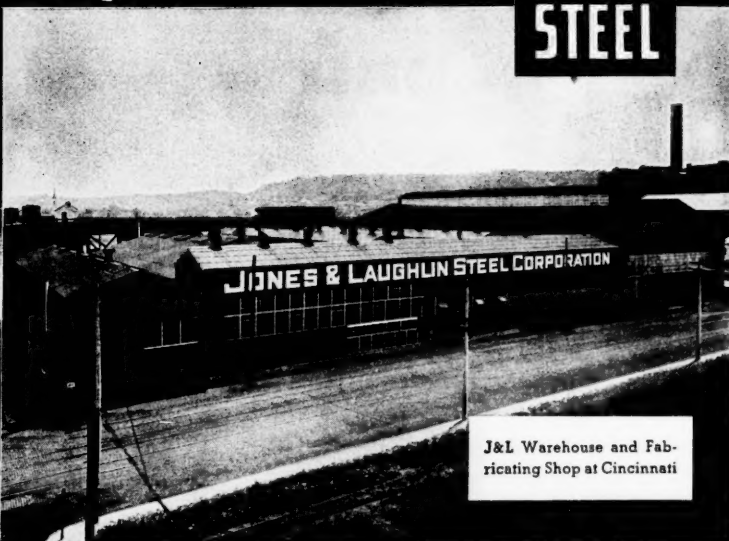
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Ten Month's Construction Contracts \$690,471,000

CONSTRUCTION contracts awarded during the first ten months of this year for industrial projects, buildings both private and public, roads and bridges and for other types of engineering work in the sixteen Southern states amounted to \$690,471,000. This is a drop of fourteen per cent from the \$770,769,000 of last year at this time, but represents gains of from sixteen to one hundred fifty-six per cent over comparable periods between 1930 and 1936.

Private building awards this year are valued at \$158,846,000, an increase of forty-eight per cent above the \$106,775,000 total for such projects in the ten-month period of last year. This is made up of \$36,440,000 for apartments and hotels; \$2,222,000 for association and fraternal buildings; \$10,595,000 for bank and office projects; \$4,371,000 for churches; \$76,321,000 for dwellings, and \$28,897,000 for store work.

Percentage gains over the 1936 totals made in these types of private work during the first ten months of this year are: Thirty-seven per cent for apartment and hotel work; one hundred seventy per cent for association and fraternal buildings; sixty-three per cent for bank and office projects; thirty-five per cent for church buildings; forty-three per cent for dwellings, and fifty per cent for store projects.

City, county, federal and state projects with a total of \$89,960,000 so far this year show a decline of thirteen per cent from the 1936 figure. The \$37,573,000 total of school contracts is nineteen per cent below last year's \$46,948,000.

Filling station contracts with a valuation of \$5,939,000 show a twenty-four per cent increase. All other types of projects in the industrial and engineering field recorded decreases. Drainage, dredging and such projects dropped thirty-seven per cent, industrial buildings fifteen per cent,

and sewers and water works twenty-six per cent.

Total construction awards this year started off with \$74,181,000 in January. A downward trend was noted in February, when awards totaled \$58,990,000, and the lowest point for the first half of the year was reached in March, with its \$56,863,000 figure. A sudden rise came in April with awards of \$76,747,000 and continued in May, when the total soared to \$81,817,000, the peak month for the year so far.

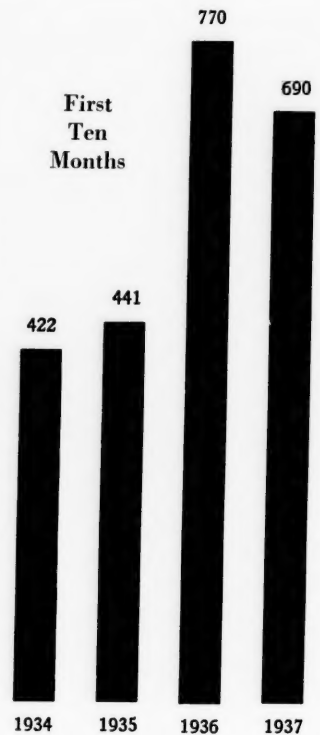
A slight decline to \$80,813,000 was made in June. This continued through July with its \$77,759,000 and also in August with its \$71,532,000 total. September witnessed a further drop to \$59,532,000. October's \$52,471,000 is the lowest figure for the year so far, and is eleven per cent under September and fifty-three per cent below the \$114,047,000 of October of last year.

The current October figure includes \$15,454,000 for private building, which is now ahead of last October by over four per cent, but shows a slowing up of about twelve per cent from September, when private building reached the second highest total for the year. Apartment and hotel contracts in October with a total of \$5,525,000 surpassed the figures for this type of work in both the preceding month and in October of last year.

Store contracts in October were also higher than in September. Bank and office contracts almost doubled those awarded in the preceding month and totaled \$1,050,000.

October public building contracts advanced to \$10,605,000, as compared with the \$9,865,000 for September. The rise was due to greater school awards amounting to \$2,996,000, or almost a fifty-six per cent increase over the \$1,921,000 of the preceding month. Road

Southern Contracts
(Millions of Dollars)



Southern Construction Activity

	Contracts Awarded		Contracts to be Awarded		Contracts Awarded
	October 1937	October 1936	October 1937	October 1936	Ten Months 1937
GENERAL BUILDING					
Apartment and Hotels	\$5,525,000	\$3,910,000	\$1,533,000	\$2,210,000	\$36,440,000
Association and Fraternal	75,000	.....	2,368,000	200,000	2,222,000
Bank and Office	1,050,000	115,000	488,000	2,205,000	10,595,000
Churches	469,000	425,000	1,432,000	640,000	4,371,000
Dwellings	6,254,000	6,978,000	4,600,000	7,366,000	76,321,000
Stores	\$2,081,000	3,425,000	2,637,000	3,720,000	28,897,000
	\$15,454,000	\$14,853,000	\$13,058,000	\$16,341,000	\$158,846,000
PUBLIC BUILDINGS					
City, County, Government and State	\$7,639,000	\$8,127,000	\$10,929,000	\$19,870,000	\$89,960,000
Schools	2,966,000	6,596,000	16,810,000	13,885,000	37,573,000
	\$10,605,000	\$14,723,000	\$27,739,000	\$33,755,000	\$127,533,000
ROADS, STREETS and PAVING					
	\$9,323,000	\$19,524,000	\$27,086,000	\$38,765,000	\$132,013,000
INDUSTRIAL and ENGINEERING					
Drainage	\$3,144,000	\$1,848,000	\$7,263,000	\$10,640,000	\$21,065,000
Filling Stations and Garages, etc.	660,000	850,000	727,000	465,000	5,939,000
Industrial Plants	11,625,000	58,018,000	32,220,000	36,510,000	198,399,000
Sewers, Waterworks	1,660,000	4,231,000	9,825,000	14,063,000	26,676,000
	\$17,089,000	\$64,947,000	\$50,835,000	\$61,678,000	\$252,079,000
Total	\$32,471,000	\$114,047,000	\$117,918,000	\$150,539,000	\$690,471,000



STEEL TANKS FOR LIQUID PROCESSES

Water Treating Plant in Florida of Steel Plate Construction

The Pinellas Water Company's water softening and filtration plant at Cosme, Fla., illustrated above, is of steel plate construction. It has a capacity of 5 mgd and is used to treat the water supply for the City of St. Petersburg, Fla.

Steel plate construction was selected, in this instance, because of its economy and adaptability to the conditions encountered. Steel is impervious to water. Welded construction prevents leaks at the joints and eliminates seepage. Steel tanks, when painted

regularly, have long life. Maintenance costs are low.

The Cosme plant, which was designed by Malcolm Pirnie of New York, is a typical example of the manner in which steel tanks can be used for water treatment purposes. They are equally advantageous in providing facilities for industrial processes of all kinds.

ELEVATED TANKS

In addition to standard and special design flat-bottom storage tanks, we build elevated tanks in a complete range of capacities

and designs to meet your requirements. The ellipsoidal-bottom and radial-cone types provide gravity water pressure with a minimum of variation between the upper and lower water levels, improving service and reducing operating power costs.

PRESSURE TANKS

Spherical and spheroidal tanks are built in standard capacities for the storage of liquids and gases under pressure. Pressure vessels built in accordance with Paragraph U-68 of the A.S.M.E. Code for Unfired Pressure Vessels are x-rayed and stress-relieved at our Birmingham plant. Write our nearest office for quotations.

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Houston2919 Main Street
Tulsa1611 Hunt Bldg.

New York3313-165 Broadway Bldg.
Cleveland2216 Rockefeller Bldg.
Chicago2106 Old Colony Bldg.
San Francisco1040 Rialto Bldg.

Philadelphia1619-1700 Walnut Street Bldg.
Detroit1510 Lafayette Bldg.
Boston1510 Consolidated Gas Bldg.
HavanaEdificio Abreu 402

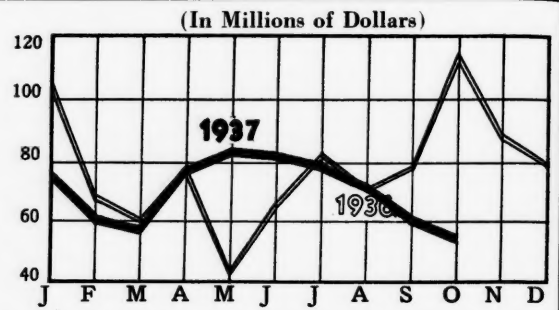
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• Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.

awards dropped from \$14,899,000 in September to \$9,323,000 in October.

October industrial and engineering awards of \$17,089,000 showed a slight increase over those for September but were a decided decline from October, 1936. Increases over September with \$3,144,000 for drainage, dredging and irrigation and levee, revetment and seawall projects, \$1,660,000 for sewer and water works projects, and \$660,000 for filling station construction were responsible for holding up the figure. The current October awards for industrial construction alone amounted to \$11,625,000.

Contracts
Awarded
by Months
in the South,
1936-1937



Representative Projects in South Last Month

Contracts Awarded

Ala., Mobile—National Gypsum Co. Plant; H. K. Ferguson Co., Cleveland, Ohio; Contr.....	\$ 1,000,000
D. C., Washington—Architect of Capitol Pneumatic tube system (Library of Congress); Lamson Co., Syracuse, N. Y., (low bidder).....	131,000
D. C., Washington—Rev. Patrick E. Conroy, Pastor Church; Charles J. Cassidy Co., Contr.....	120,000
D. C., Washington—District Commissioners School (Dennison Vocational); Ross Engineering Co., (low bidder).....	348,000
D. C., Washington—Papal Delegate Delegation building; Harwood-Nebel Construction Co., Washington; Contr.....	480,000
Fla., Miami—Major Sam W. Kendall and William Raskin, Miami Beach Community center.....	100,000
Fla., Miami Beach—Henry Hohaus, Archt. Hotel; L. H. Miller Construction Co., Contr.....	125,000
Fla., Pensacola—Standard Oil Co. Bulk storage and bunkering plant.....	100,000
La., New Orleans—City Commission Council Air conditioning (Concert Hall and Auditorium); Carrier Corp., (low bidder).....	187,000
Md., Baltimore—James Piper Building alterations; Cogswell Construction Co., Contr. Md., Essex—Baltimore County Commissioners Sewers; Marocco Construction Co., Baltimore; (low bidder).....	100,000
Md., Kensington—Montgomery County Board of Education School; Carlstrand Engineering Co., Baltimore; (low bidder).....	241,000
Mo., Kirkwood—Treasury Department Marine Hospital; Foster & Creighton Co., Nashville, Tenn., Contr.....	141,000
Mo., Richmond Heights—M. E. Singleton Apartment group; H. B. Deal & Co., Inc., St. Louis, Contrs.....	1,101,000
N. C., Raleigh—State Building Commission State office building; J. J. McDevitt Co., Charlotte, Contr.....	2,000,000
Tex., Bryan—City, E. E. Yeager, Mayor High School; Gilbert Falbo Co., San Antonio, Contr.....	443,000
Tex., Corpus Christi—Columbian Carbon Co. Carbon black plant; H. J. Glaxon, Contr.....	210,000
Tex., Corpus Christi—Duval Pipe Line Co. Pipe line; Williams Brothers, Inc., Tulsa, Okla., Contr.....	400,000
Tex., Greenville—Farmers Electric Cooperatives, Inc. Rural lines; Jos. E. Morgan & Sons, El Paso, Contr.....	500,000
Tex., Houston—Champion Paper and Fibre Co. Water Tunnel; Morrison-Knudsen Co., Inc., Los Angeles, Calif., Contr.....	397,000
Tex., LaPorte—LaPorte Independent School District Schools; Gulf Coast Construction Co., Houston; (low bidder).....	125,000
Tex., Lubbock—Texas Technological College Library; Nathan Wohlfeld, Dallas, Contr.....	103,000
Tex., San Antonio—State Board of Control Dormitory (San Antonio State Hospital); Ed. W. Offinger, Contr.....	219,000
Tex., Shamrock—United Gas System and Lone Star Gas Co. Compressor stations.....	101,000
Tex., Waco—Baylor University Physical Education building; S. B. Swigert, Waco, Contr.....	500,000
Va., Alexandria—City, E. C. Dunn, City Mgr. High school addition; T. Calvin Owens, Bethesda, Md., Contr.....	175,000
Va., Arlington—Department of Agriculture Research station; McCloskey & Co., Philadelphia.....	144,000
Va., Newport News—U. S. Maritime Commission Liner; Newport News Shipbuilding and Drydock Co.....	738,000
	15,750,000

Proposed Construction

Ala., Mobile—Hollingsworth & Whitney Co. Paper plant.....	\$ 5,000,000
D. C., Washington—Henry K. Jawish Apartment; Dillon & Abel, Designers.....	165,000

Ga., Gainesville—Best Manufacturing Co. Silk plant; J. E. Sirrine & Co., Greenville, S. C., Engrs...	150,000
Ga., Rome—Montgomery Ward & Co. Store.....	100,000
La., Baton Rouge—Standard Oil Co., of Louisiana Plant addition.....	3,000,000
La., New Orleans—Walgreen Drug Stores Drug store; A. Epstein, Chicago, Ill., Struc. Engr.; Weiss, Dreyfous and Seifert, Asso. Archts.....	150,000
La., Shreveport—Southern Bell Telephone & Telegraph Co. Dial telephone exchange; Edward F. Neild, Asso. Archt.	100,000
La., Shreveport—Texas and Pacific Railroad Freight depot; Edward F. Neild, Archt.....	100,000
Md., Baltimore—John J. Carlin Amusement park.....	300,000
Md., Silver Spring—C. H. Hillegast Co. (Leasing Agents) Stores and theatre; John Ebersson, New York, Archt.....	1,000,000
Mo., Jefferson City—State Building Commission State office building.....	850,000
Mo., St. Louis—Municipal Theatre Association Theatre improvements.....	100,000
Okla., Sapulpa—Wickham Packing Co. Packing plant.....	100,000
S. C., Charleston—Southern Bell Telephone & Telegraph Co. Dial office.....	1,300,000
Tenn., Kingsport—Kingsport Press Improvements.....	125,000
Tex., Beaumont—Port Commission Wharf improvements; Harrington & Cortelyou, Kansas City, Mo., Engrs.....	375,000
Tex., Brownsville—C. A. Brania Winery.....	100,000
Tex., Corpus Christi—City, A. C. McCaughan, Mayor Yacht basin.....	100,000
Tex., Dallas—Board of Education Negro High School; Walter C. Sharp, Archt.....	275,000
Tex., Dallas—Cliff Temple Baptist Church Auditorium; T. J. Galbraith and Harry Brownson, Archts.....	100,000
Tex., Dallas—Oak Grove Apartments Dwellings; James B. Cheek, Archt.....	432,000
Tex., Galveston—United Fruit Co. Banana wharf.....	250,000
Tex., Houston—City, R. H. Fonville, Mayor City Hall.....	1,818,000
Tex., Houston—City, J. M. Nagle, Director of Public Works Sewer projects.....	274,000
Tex., Kingsville—Texas College of Arts & Industries Science building; Phelps, Dewees & Simmons, San Antonio, Archts.....	210,000
Tex., Pecos—Board of Education School; Voelcker & Dixon, Wichita Falls, Archts.....	120,000
Tex., San Antonio—City, C. K. Quin, Mayor Fire station; John M. Marriott, Archt.....	100,000
Tex., San Antonio—Missouri-Pacific Lines Car sheds.....	100,000
Tex., Sherman—City, W. Morgan Works, City Mgr. Water works improvements, swimming pool; Hawley, Freese & Nichols, Fort Worth, Engrs.....	165,000
Tex., Van Alstyne—Grayson-Collin Electric Cooperative Rural lines; Hawley, Freese & Nichols, Fort Worth, Engrs.....	100,000
Tex., West University Place, Houston—City, Harvey T. Fleming, Mayor Disposal plant, sewer system; J. C. McVea, Engr.....	100,000
Va., Arlington—Chesapeake & Potomac Telephone Co. of Virginia Building; Merrill C. Lee, Richmond, Archt.....	200,000
Va., Clarendon—Chesapeake & Potomac Telephone Co. of Virginia Exchange.....	1,000,000
Va., Marion—Town, Francis Hoge, Mayor Sanitary sewer system; J. B. McCrary Co., Inc., Engrs...	261,000
W. Va., Glen Dale—Triangle Conduit and Cable Co. Plant addition.....	100,000
W. Va., Wheeling—Fidelity Investment Association Building.....	299,000

DO YOU WANT
THE RIGHT ANSWER

*right
now?*

PICK UP your telephone and ask for Long Distance. The whole world of business is at the other end. In approximately a minute and a half (average) you can talk to any one anywhere in the country.

The accelerating pace of business makes minutes more valuable, puts a premium on quick, correct information. Will the buyer be in when you reach Chicago? Can the factory fill from stock or start production? When will the shipment arrive?

Get the facts, discuss details, make decisions, and be free for other affairs. It pays. Try it!



TELEPHONE — *to save days and dollars*

Iron, Steel and Metal Market

IN the last week of October the U. S. Steel Corporation declared a dividend of \$1.00 a share, the first one in more than five years, on its common stock.

News of importance to the steel industry, and to the business world generally, was given out at the same time. Myron C. Taylor is to resign the chairmanship next April, and Edward R. Stettinius, Jr., is to succeed him. Benjamin N. Fairless, now president of Carnegie-Illinois Steel Co., at the same time next spring will succeed Wm. A. Irvin in the presidency.

J. L. Perry, present president of the Tennessee Coal, Iron and Railroad Company of Birmingham, has been chosen to succeed Mr. Fairless as president of Carnegie-Illinois Steel Company, while Robert Gregg, now vice-president of the Steel Corporation, has been appointed head of the Tennessee Coal, Iron and Railroad Company.

Ender M. Voorhees, formerly vice president of the Johns-Manville Corporation, is to become Chairman of the Finance Committee.

For the nine months ending September 30, 1937, the net profit of the Steel Corporation, before federal surtax on profits, was \$95,352,000 after charges and Federal income taxes. The figures for the same period of 1936, and on the same basis, were \$29,874,000.

The operating rate of steel companies declined to 52.1 per cent of capacity for the week beginning October 25. A year ago it was 74.3, and was at that figure a month ago. This brought about the laying off of unskilled labor to some extent, while in the Pittsburgh district working schedules have been reduced in a number

of mills from a 40-hour basis to less than 24. Notwithstanding the reduction, the outlook is not regarded pessimistically.

As pointed out in this column last month, production in sheets particularly may be expected to improve as automobile demand grows with the appearance of new 1938 models. The first of the shows will be held this month, and automobile producers have gone on record as expecting 1938 to equal in volume 1937 figures, which have far surpassed any year since the depression started. They are, in fact, almost up to record totals of any time in the past.

While the increase in freight rates recently granted by the Interstate Commerce Commission does not give the railroads all that they ask, nor all that they need to put their house in order, it will stimulate buying on the part of the roads for necessary repairing and new equipment material. Furthermore, the door has been left open by the Commission for the railroads to present their requests for larger freight allowances.

The convention of the American Institute of Steel Construction, in session at White Sulphur Springs, was told by President Clyde G. Conley that "the structural steel industry must seek lower costs so that markets might be expanded" and pointed out that in his opinion the nation in general must prosper before the steel construction industry can improve materially."

New orders for fabricated steel during September were in practically the same amount as August, or 50.4 per cent of normal. The average monthly bookings for the first nine months of 1937 were 62.5 per cent. September shipments, how-

ever, averaged 66 per cent of normal as compared to 58.8 per cent average for the nine months.

The news that Ford Motor Company was in the market for 45,000 tons of steel to be used in the construction of a new foundry and other plant additions was outstanding among the inquiries for the month which indicate an increase from the present rate of steel production soon.

American Rolling Mill has announced a \$2,000,000 improvement project for the company's Middletown, Ohio, plant to round out existing production facilities and increase efficiency of the various units. The company also announced that present prices of sheet iron and steel will be continued in the first quarter of next year. It was pointed out that despite increased costs of raw materials and much higher labor rates, sheet prices are still lower than they were in 1926.

Republic Steel, reporting for the quarter ending September 30, showed net profits of \$3,237,156 after deductions and a provision for surtax on undistributed profits. The new 98-inch continuous mill of Republic at Cleveland is nearing completion.

In the Birmingham area, steel production has remained practically unchanged. Current steel prices were reaffirmed for the first quarter of 1938 by the Tennessee Coal, Iron and Railroad Company. The Ensley rail mill of Tennessee Coal, Iron and Railroad will resume operations early in November upon receipt of an order for 13,900 tons of rails and rail fastenings for the Manchurian Railway. The plant has been closed since August 27th.

New steel orders from the farm markets is still only moderate and has not yet developed to the extent expected with the marketing of crops.

In the near future a number of new Alabama P. W. A. projects are to be placed under contract which, with the looked for resumption of private buying, should soon be reflected in greater production activity.

Scrap prices declined during the month to new low figures. These are now \$6 below the peak of last spring.

In other metals, domestic copper in the latter part of October was reduced from 13 cents to 12 cents. Copper wire fabricators followed with reductions, as well as brass and copper products makers.

Foreign copper consumption, according to the American Bureau of Metal Statistics, averaged 126,620 short tons monthly for the last three months, which was an increase of 20,000 tons over the monthly average for 1936.

World production of lead and zinc has made slight declines. The United States output of lead during September totaled 37,989 tons as compared with 42,460 tons in August, while world production of zinc in September was approximately 5,000 tons short of August production figures.

Gas, tar, oils and chemicals valued at more than 133 million dollars were produced by the steel industry in 1936 as by-products incidental to the production of coke.

PROMPT DELIVERIES FROM STOCK (Standard Sizes)



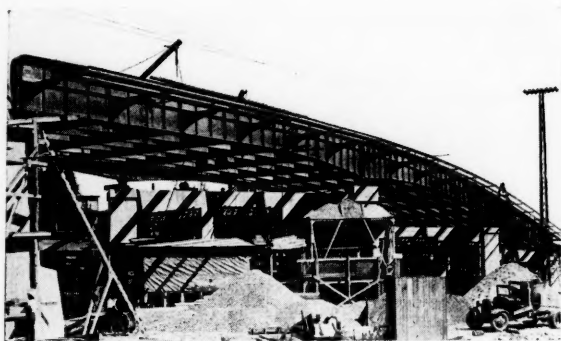
ORIOLE GALVANIZED STEEL SHEETS

Flat-Corrugated-Roofing

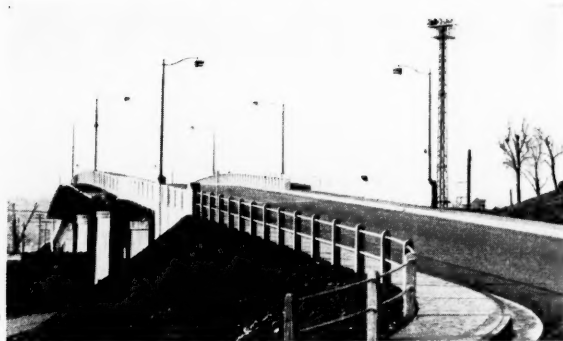
THE EASTERN ROLLING MILL CO.

BALTIMORE, MARYLAND

District Office, Petroleum Bldg., Houston, Tex.



Two Views above show the Franklin Road Bridge over Virginian Railway, Roanoke, Va. Main portion consists of three 121-foot through plate girder continuous spans. Clear Roadway is 40 feet with sidewalks each side.



Sightly—And They Are Steel

TO the known strength and dependability of steel, modern design has added graceful lines and appearance fully in keeping with the times—Steel for Strength and Security and also Steel for looks.

This we can see today all over the country from the George Washington and San Francisco bridges to the single span which carries our highway over the nearby railroad.



Above is Red River Bridge, Shreveport, La. One 520-foot cantilever Span and two 182-foot Anchor Arms.

Below is Bridge over Illinois Central Railroad, Meridian, Miss. 320-foot Plate Girder Cantilever and Suspended Span (Suspended Span 100 feet).



VIRGINIA BRIDGE COMPANY

Roanoke Birmingham Memphis Atlanta
New York Dallas El Paso
Plants at Roanoke, Birmingham, Memphis.

VIRGINIA BRIDGE

Lumber News

of the Month

Southern Pine Production

The Southern Pine Association "Weekly Trade Barometer" showed some recession in early October as compared to September and previous months of this year. Production in October has been 11 per cent below the average for September and 16 per cent below the average output for the 41 weeks ended October 16 this year. Shipments declined 9 per cent from September and were 11 per cent below the average for the year; while orders dropped 17 per cent from September and were 17 per cent below the average for the year.

In the 41 weeks ended October 16, 113 reporting mills produced 1,312,645,000 feet of pine, shipped 1,290,264,000 feet, and booked orders for 1,239,441,000 feet. Thus, for the 41 weeks of the year, shipments have aggregated 98 per cent of production, and orders 94 per cent of production. As compared to 1936, production thus far in 1937 has declined 1 per cent, while shipments are down 6 per cent, and orders are off 10 per cent.

Stocks at these 113 reporting mills, on October 16, showed an increase of 19 per cent over the like date a year ago, and are about at the level these mills would consider adequate to meet the normal requirements of their business. Reporting mills are now averaging about 41 hours a week in operating time, compared to 43 hours at this time a year ago.

September is the first month in 1937 to show a decline in home building from the corresponding month of the previous year, and this very discouraging report indicates a definite attitude among business and industrial leaders to defer commitments pending the outcome of political developments in Washington. Employment records, which showed encouraging gains through July, have again slumped off, and it is becoming more apparent that the durable goods industries, which furnish the basis for our national prosperity, are not in position to withstand the legislative restrictions being imposed upon them.

Rising prices and inflation, superimposed upon a weakened industrial structure, will react adversely upon markets and retard consumption at a time when it is most needed to insure widespread employment and earnings. There are ample signs of the dangers involved in any effort to artificially adjust and control our national economics, and such efforts now are likely to legislate depression rather than prosperity.

Available Pile Timber

An estimate of the quantity and sizes of pine timber in the pine-hardwood region west of the Mississippi river, and included in the seven survey units of nearly 50,000,000 acres of the U. S. Forest Service, that are suitable for poles and piles has recently been reported.

Of this area, over 31,000,000 acres support some form of forest growth, mostly rapid growing second-growth pines. Longleaf types occupy about 9 per cent, shortleaf-loblolly 34 per cent, short-

leaf-loblolly-hardwoods 24 per cent, upland hardwoods 17 per cent and bottomland hardwoods 16 per cent.

The 120,000,000 trees deemed suitable for use are divided as follows:

Pole or pile length	Number (thousands)	Percent of total
20 feet	108,170	69
25 feet	58,218	
30 feet	42,838	
35 feet	16,022	
40 feet	8,904	7
45 feet	4,140	
50 feet or over	2,608	

Forest Resources

The forest resources in that portion of Arkansas lying west of the alluvial delta of the Mississippi river and south of the Ouachita mountains, embracing an area of 8,931,000 acres of which over 6,000,000 acres are forested, has recently been surveyed by the U. S. Forest Service.

Though shortleaf and loblolly pines in mixture with hardwoods are the predominating trees of the region, there is a larger proportion of loblolly in the southern part than along the foothills of the Ouachita mountains, where shortleaf and hardwoods are indigenous associates. Along the rivers and in many of the smaller stream-bottoms is found the bottomland hardwood type, made up principally of red and black gums, red and white oaks, cypress and ash. Stands of red gum, post oak, hickory and a few pines form the upland hardwood type which occurs in scattered patches throughout the pine areas.

Forest areas classified according to forest condition and forest type group follows:

Forest condition	Total all types trees	% of total
Old growth		
Uncut	326,900	5.3
Partly cut	480,600	7.9
Second growth		
Sawlog size		
Uncut	2,408,100	39.5
Partly cut	1,425,000	23.4
Under sawlog size	1,327,700	21.8
Reproduction ...	129,600	2.1
Total	6,097,900	100

Conferences to Stimulate Private Building

Several conferences have recently been announced with the avowed purpose of devising ways and means to stimulate residential building. Outstanding among these conferences is that scheduled for early December and called by the U. S. Chamber of Commerce in cooperation with representatives of interested trades and professions.

The average number of urban dwellings built during 1920-1929 has been estimated at 677,000 annually whereas the average for 1930-1936 was only 165,000. The 275,000 constructed in 1936 justified expectation that the 1937 building volume would be greater by 50 or 60

per cent. In the last few months, however, the rate of increase has materially slackened so that it now appears the increase will probably not exceed half of that predicted.

The continued recovery of residential construction is most important. In 1928 this accounted for about 40 per cent of a total \$11,000,000,000 volume of private and public building. In 1936 it accounted for only 18 per cent of a total \$6,750,000,000.

The National Lumber Manufacturers Association has announced its intention to continue and enlarge its national program, and consideration of plans for the extension of the organization's Small Homes Demonstration Program will be the principal item on the agenda when the Board of Directors meet in New Orleans from November 10 to 12. This meeting will be held in conjunction with that of the Southern Pine Association.

The National Small Homes Demonstration Program, conducted jointly by the National Lumber Manufacturers Association and the National Retail Lumber Dealers Association has, during the summer and fall of 1937, sponsored construction of nearly 3,000 houses at costs ranging from \$1,000 to \$5,000 each and was based on designs for three small houses whose original construction costs ranged from \$2,000 to \$4,500.

Black Gum For Paper

Dr. Charles Herty has announced at Savannah, Ga., that as a result of three years experimentation in his laboratory a process has been perfected for manufacturing newsprint from the black gum, a tree indigenous to most of the Southern states.

Describing it as "The most important development from our laboratory since the day we made our commercial experimental run with pine pulp at Thorold, Canada, about four years ago," Dr. Herty estimates that this new source will mean an addition of 40% to the already existing resources for the manufacture of paper and newsprint in particular.

The paper produced from black gum pulp is said to be superior to the average of 17 commercial varieties when subjected to tests for determining tensile and other strengths, while sample newsprint pages used by the Savannah Evening Press demonstrates its qualities.

Bright in color with smooth surface the body is substantial and lends itself well to the reproduction of both type and engravings.

Commenting upon the forest resources of the South Dr. Herty referred to the survey conducted during the past five years by the U. S. Forest Service which indicated availability of approximately 225,000,000 more cords of wood suitable for the manufacture of newsprint and other paper than have hitherto been considered.

Perhaps the greatest advantage which black gum offers, lies in the fact that because of its density, more pulp can be obtained per cord of wood than from most pulp woods.



AmCreCo pressure creosoted piles and timber are ideally suited to highway bridge construction, for their constant strength assures longer structure life. Pressure creosoting which eliminates decay and reduces natural deterioration makes this possible. The advantages of expansibility, low first cost and minimum maintenance expense are further factors in the economy of AmCreCo products.

AMERICAN CREOSOTING COMPANY

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ADDRESS INQUIRIES TO CHICAGO, ILL., OR LOUISVILLE, KY.

Good Roads and Motor Transport

Development of Virginia Highways

A careful study of the road situation of Virginia has revealed the necessity of an extensive highway construction plan involving an estimated annual expenditure of \$33,000,000 for the next 15 years. The proportionate allotment of this sum would include \$15,000,000 for construction and \$3,000,000 for maintenance of primary roads, and \$10,000,000 and \$3,000,000 for construction and maintenance respectively of secondary roads. The amount expended to date on the two systems is \$280,000,000, or rather less than half the total necessary outlay.

The secondary road system presents a serious problem according to the State Highway Commission and to deal adequately with the situation will require a total outlay of \$150,000,000 or more.

Though road development in the early days in Virginia was well to the forefront and comprehensively outlined, the advent of the railroad caused road haulage to be largely supplanted and much of the highway system already built fell into disuse and decay. But, with the coming of motor vehicles in the late nineties, road construction became a pressing problem necessitating creation of the Highway Department to study the development.

By 1918 the point had been reached where it was essential for the State to take active participation in road building and the legislature accordingly authorized the building of a state highway system consisting of about 4,000 miles.

The problem in Virginia was the same as that found in other agricultural states. Virginia having no very large cities but its population fairly well distributed in towns and cities throughout, made the problem one of serving the entire state rather than building heavy trunk lines between large centers and to construct a good serviceable system of highways in the quickest possible time with the small amount of funds available.

As a result it was eventually decided to locate the roads to be constructed on the best alignment, putting in permanent drainage structures and using a not too expensive surfacing. During the past 14 years the oiled surface roads so constructed have only broken up once or twice and were restored at comparatively small cost.

The constant increase in traffic since 1926, when the count records started, has been uniformly 10% per year for the past 10 years. The cost of maintenance has naturally risen with the increased volume

of traffic and the increased vehicular speed has made it necessary to build a surface that will be non-skid and include other features to reduce road hazards.

In the early stages of road construction for automotive traffic a width of 14 feet was sufficient for two vehicles to pass, whereas now it requires 20 to 22 feet for safe passage at the present rates of speed. It also has been necessary to increase the strength of road surfacing by thickening or reinforcing so as to carry the heavy trucks and to increase the carrying capacity of bridges to meet these requirements. On the heavily travelled roads four lanes are necessary and very often a two lane with an intervening grass plot or parking space between. There are a number of miles of this type of construction being built in the state at the present time.

Cotton Fabric Roads

The use of cotton fabric as a means of reinforcing bituminous surfaced highways continues to provide satisfaction, according to the Cotton-Textile Institute.

During 1936 approximately 500 miles of roads were constructed utilizing cotton and considerably more will be completed before the end of 1937.

Both New York and Maine express entire satisfaction with their experiments and state that the condition of the roads represents an improvement over that prevailing before the cotton reinforcement. In New Jersey cotton roads have proved sufficiently satisfactory, with one in particular said to be in perfect condition after three years of use, to justify construction of others.

One stretch of cotton road at Perkin-town, N. J., has attracted the attention of road builders because of the use of cotton fabric in conjunction with slow curing oil. Over the road base was laid 82-inch fabric and the 55% asphalt content oil was applied directly and sand spread on top. Traffic movement causes the sand and oil to mix and form a surface mat less than one-half inch thick. Similar experiments are being made in other parts of New Jersey, each employing variations of surface materials but emphasizing the advantages of slow curing oils.

Mississippi's Program

Those states which are reaping a "visitor harvest" as a result of improved highway construction will derive additional benefit when Mississippi's primary

road system of 2,750 miles is completed.

Started in 1932, the first through road was opened in 1936 between Meridian and Vicksburg and by January next the first north and south road will be finished, thus making available continuous improved highway facilities from Memphis, Tenn., to New Orleans, La. Completed roads will total nearly 2,000 miles. Additional funds in excess of the \$42,000,000 provided from federal sources, will be taken care of in future state budgets.

Highway Research Board Expands Annual Meeting

In order to provide opportunity for needed discussion of many important road and transportation problems, the 17th annual meeting of the Highway Research Board of the National Research Council will be held in Washington, D. C., for four days, November 30 through December 3, instead of the usual two days. A large part of the time will be devoted to open departmental meetings on economics, design, materials and construction, soils investigations and roadside development.

Research work on all phases of highway transportation has been very active during the past year, and reports of widespread activity will be discussed.

Trailer Legislation

The confusion of state legislation affecting house trailers, has prompted the New York legislature and a nine-state highway safety conference to inaugurate formation of a Uniform Trailer Legislation Committee for the purpose of drafting standard laws.

The establishment of uniformity in this field of automotive traffic will facilitate proper regulation and free the trailer user from the confliction that now gives ground for complaint.

While the maximum height of a trailer is unlimited in most states, it is restricted to 13 feet in New York and to 12 feet 2 inches in Connecticut. The variation of length limits is from 27 feet in Tennessee to 60 feet in Nevada with some states like Massachusetts limiting capacity to 1,000 pounds. The question of chemical sewage disposal systems though required by some is specifically barred by other states.

With such a diversity of contradictory legislation it is virtually impossible for a trailer user to traverse the country without violation of the law.

TRAFFIC HAS CHANGED...STANDARDS HAVE CHANGED...

BUT TODAY, AS BACK IN 1912,

THE BEST ROAD IS CONCRETE

BACK in 1912, New Jersey pioneered by building its first mile of concrete road. Not over 50 miles of concrete pavement then existed in the whole United States outside of cities. Was this the best answer to the strange new problem of the automobile? Its builders believed it was.

After 25 years the *original surface* of that pioneer pavement is still giving satisfactory service . . . and through this quarter-century of revolutionary traffic change, concrete has become the standard by which all other pavements are judged.

Concrete's preeminent position is well-earned

Today concrete ranks first in every pavement essential:—

First in *economy*; it costs less to build than other pavements of equal load carrying capacity; and only 1/2 to 1/5 as much to maintain as other surfaces.

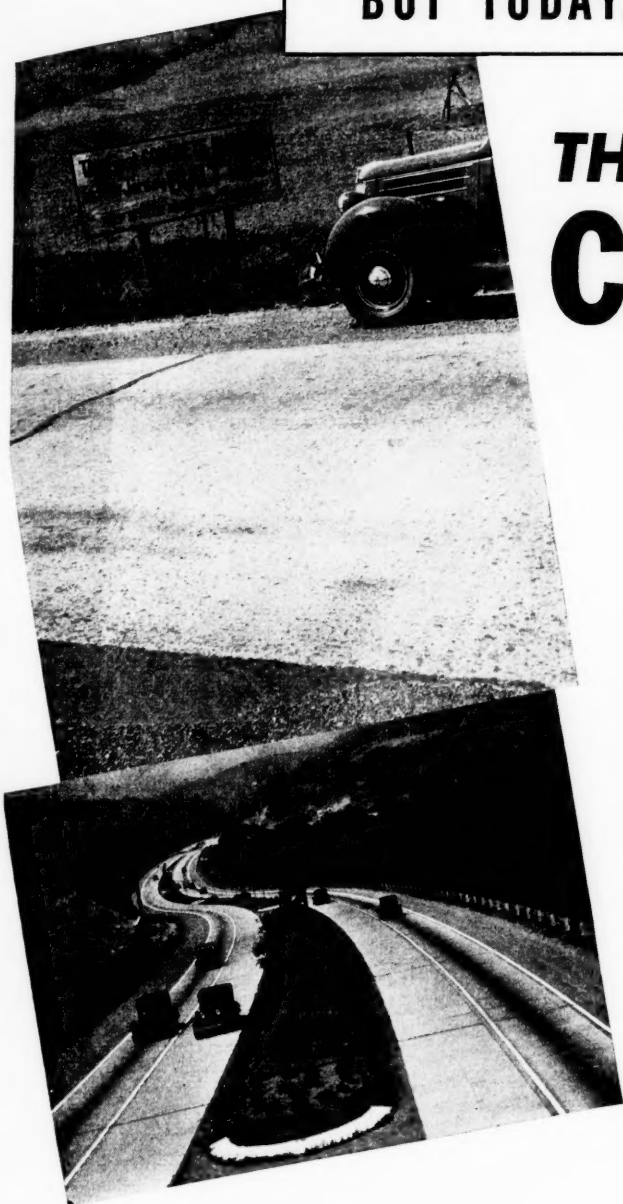
First in *safety*; millions of motorists are thankful for its high visibility and dependable tire-gripping surface.

And first in *public preference*; who *hasn't* felt the sense of relief in coming from other surfaces onto smooth-riding concrete!

PORTLAND CEMENT ASSOCIATION

Dept. 11-21, 33 W. Grand Ave., Chicago, Ill.

*A National Organization to Improve and Extend
the Uses of Concrete*



Above—Here is New Jersey's first mile of concrete as it looks today.

Below—New Jersey Route 23, one of the country's longest 4-lane divided highways.

New Ways of Doing Things

Ladle Handling Lift Truck

Citing a new application for one of its power trucks, the Towmotor Company, of Cleveland, Ohio, announces a unit with a vertical lifting arrangement, swinging arms and ladle-tilting mechanism to handle a ladle of 2000 pounds capacity of molten iron. Complete equipment is manufactured by the company, including also, a universal jointed tilting wheel, mounted on the truck, which attaches to the mechanism as shown. Height of the hydraulic lift from floor to lip of ladle in pouring position may be adjusted from a few inches above the



floor to any specified height. The structural welded unit from which the ladle is suspended hinges on a plate attached to the hoisting mechanism, thus permitting the ladle to be swung from one side to the other. All movements are under control of the operator from his position on the truck.

Paddle Type Blower Wheels

Adding a Paddle Type Blower Wheel to its patented AUTOCRAT line of aluminum blower wheels, the Torrington Manufacturing Company, Torrington, Conn., announces that while the unit was originally designed for automobile windshield defrosting it has many additional applications. They are being used for automobile heaters, small hand hair dryers, air circulators in ice box refrigeration and in other instances where a small air delivery is required. Made in three sizes—2-inch, 2½-inch and 3-inch—each unit is equipped with seven aluminum blades, brass hub and set screw.

Ambulance For Emergency Treatment

Designed to bring the emergency room to the patient quickly instead of waiting for treatment until the patient reaches the hospital, a new type ambulance of large capacity has been introduced by the Dodge Division of Chrysler Corporation, Detroit, Mich. While the new unit is especially adapted to requirements of industrial companies, it is also useful for large, busy hospitals, and for emergencies that require the handling of more than one patient at a time. Standard equipment includes two removable stretchers on the right side of the body,

one on the floor and the other suspended from the ceiling directly above it. On the left side of the body and hinged to the wall is a long attendant seat which folds up when not in use. In an emergency this seat may serve as a third stretcher, and two more stretchers may also be added if needed.

Side-By-Side Trailer Compressor

Compactness is an outstanding characteristic of a new model in the compressor line of the Davey Compressor Company, Inc., of Kent, Ohio. This unit, a 105-cubic foot side-by-side trailer, is 62 inches high, 65 inches wide and 114 inches long. It is especially adapted for use where a high degree of portability is essential and may be towed behind a car. Pneumatic tires are standard equipment, and the compressor is available in either single or two stage design with no difference in price.

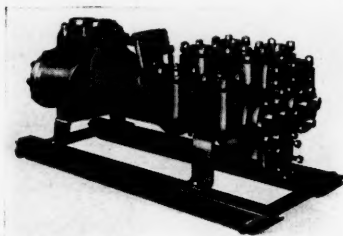
Firestone Tire for Commercial Trailers

Designed especially for use on trailers and semi-trailers, a new tire has been developed and put on the market by the Firestone Tire and Rubber Company, Akron, Ohio, which is declared to prevent side skid while reducing operating costs by giving much greater mileage. Destructive factors of road crown, sag of axles under heavy load, bearing wear and uneven inflations are also said to be eliminated. Deep grooved and of thick, tough tread, the new tire offers such internal construction as to give the greatest blow-out protection, since every fiber of every cord is coated with pure liquid rubber by the Firestone Gum-Dipping Process. The tread is contoured with a double radius, being practically flat in the center and flaring away on the outside ribs, and due to its circumferential lines, the tire is silent rolling.



Boiler Feed and Gathering Pump

The development of a new pump designed specifically for high-pressure boiler feed and gathering service in oil fields is announced by Worthington Pump and Machinery Corporation of Harrison, N. J. Mounted on steel skids to facilitate portability, the pump is a 10 by 4½ by 10 type "PG" duplex steam model. The liquid end of the unit, conservatively rated for a working pressure of 1000 pounds per square inch, is of the side pot type, with individual openings over each valve for accessibility. In the steam end, piston steam valves have been designed for 350 pounds steam pressure, and all pressure joints have been eliminated by casting the steam cylinders and steam chest integral.



Pump for Oil Field Service

Schramm Air Compressor

Developed in response to a need for a really portable compressor in construction and excavation fields where a saving in weight means a saving in money, the "UTILITY" air compressor line manufactured by Schramm, Inc., West Chester, Pa., is offered in sizes 85, 105, 160, 210, 260, 315 and 420 cubic feet actual air delivery in both gasoline and Diesel engine driven models. Weight savings run up to 3500 pounds in gasoline powered models and up to 8000 pounds in Diesel powered machines. Straight-in-line cylinder construction is used on all models, with force-feed lubrication to all seven bearings.

Fume-Resisting Paints

To prevent mill-white plant interiors from breaking down because of corrosive fumes, The Sherwin-Williams Company, New York, N. Y., has developed Save-Lite Kem Fume-Resisting Paint and Save-Lite Super Fume-Resisting Paint. Each product is designed to serve a particular purpose under the more severe conditions found in those sections of industry where standard lines of paints fail to serve. Fundamental advantages claimed for the new paints are superior resistance to moisture, heat and fumes, and lasting qualities that cut plant maintenance costs.

INTERNATIONAL TRACTRACTORS

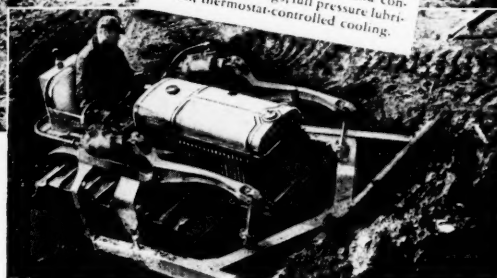
for the Tough Work, at LOW COST



International TracTractor Diesel Engines start on gasoline and shift automatically to Diesel operation after warming up for one minute or less. They are full Diesels in every respect—compression ratio is 17 to 1.

Regular features include: Chrome-nickel, molybdenum alloy cylinder head; special alloy, heat-treated, individually replaceable cylinders; aluminum alloy pistons with silchrome steel top inserts; full-floating piston pins; Diesel fuel injection pump with stainless, rust-resisting parts; easily replaceable injection nozzles; variable-speed governor; Tocco-hardened crankshaft; easily replaceable precision-type main and connecting-rod bearings; full pressure lubrication; thermostat-controlled cooling.

Above: Powerful International TD-40 Diesel TracTractor operating a 4-wheel scraper. A popular combination on dirt-moving jobs everywhere.



The International T-20 TracTractor equipped with bullgrader. Shown on excavation work, a job for which this compact outfit is ideally suited.



MODEL TD-35 DIESEL TRACTRACTOR

The popular features of International Diesel design are now available in the new International TD-35—a smaller Diesel TracTractor at a lower price. Complete information supplied on request.

INTERNATIONAL TRACTRACTOR design, quality, performance, and economy offer the answer to your power problem. Make a thorough study of the TracTractors—there are five models, to fit your needs exactly. Ask for a demonstration. The International line also includes a wide variety of wheel-type industrial tractors, and power units in sizes up to 110 max. h. p. The nearest International Industrial Power dealer or Company-owned branch will give you complete information on any tractor or power unit in the line.

INTERNATIONAL HARVESTER COMPANY

Harvester Building (INCORPORATED) Chicago, Illinois

INTERNATIONAL HARVESTER Quality PRODUCTS

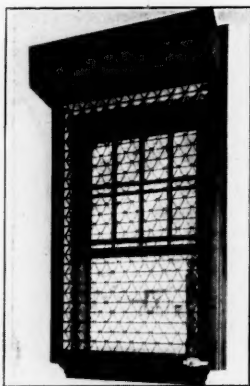
INTERNATIONAL Industrial Power

New Ways of Doing Things

(Continued from page 52)

Rolling Grille for Protection

An accompanying illustration presents a view of the Wilson Rolling Grille on a



Rolling Grille

window of a war memorial, permitting full light and air, but protecting valuable trophies from theft or damage. The grille, which is made by The J. G. Wilson Corporation, New York, N. Y., embodies the same principles of construction which have been successfully used in Wilson rolling steel and wood doors for the past 60 years. It is constructed of 3/4-inch round rods separated by 3/4-inch and by 3/4-inch steel triangular shaped links, making a rugged curtain without hindering the view of premises or merchandise it protects. Operation may be by hand, chain, crank, or motor.

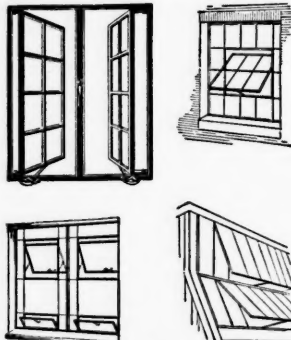
Reliance Splash-Proof and Explosion-Proof Motors

The Reliance Electric and Engineering Company, Cleveland, Ohio, in Bulletin 122, illustrates and describes an improved type of protected motor particularly suited for paper mills, packing plants, breweries, dairies, etc. The development of this Splash-Proof Type AA Motor with ball bearings, according to the manufacturer, is another step toward reducing maintenance costs and prolonging the life of squirrel-cage motors. Known as Form P Motor, 2- and 3-phase, A-C, this unit is supplied for the same general specifications as open motors. It may be designed with special torque characteristics to meet a variety of requirements.

Bulletin 124 is devoted to Explosion-Proof A-C Motors, Type AA Squirrel-Cage, 2- and 3-phase, tested and approved by The Underwriters' Laboratories for Class 1, Group D, hazardous locations. For operating in these locations, the enclosure of the motor must have ample strength to withstand, without bursting or loosening joints, the highest internal pressure which might develop in case of an explosion of gases such as may be present about the motor. Explosion-Proof Reliance Motors sold for Class 1 Group D locations, bear a special name plate to indicate that it has been tested and has fully met requirements.

Lupton Plant Increasing Efficiency

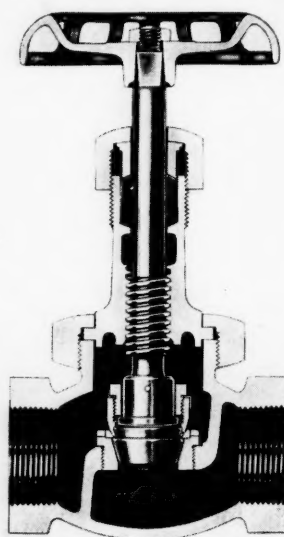
Continuing the manufacture of the well known Lupton Steel Window Products in the original Lupton plant in Philadelphia, Pa., Michael Flynn Manufacturing Company, successor to David Lupton's Sons Company, is using the same basic design, and generally, the same type steel shapes as were used by the Lupton company, with a personnel composed almost entirely of Lupton-trained men. Constantly improved production methods and maintenance of close inspection insure products of high quality, including projected windows, pivoted windows, continuous windows, window operators, steel tube doors, steel skylights, etc.



Lupton Window Products

Jenkins Plug-Seat Valve

Made of stainless steel exceeding 500 Brinell in hardness, a new Plug-Type



Jenkins Plug-Seat Valve

Valve Seat is an outstanding feature of the Jenkins 976 Plug-Seat Valve recently announced by Jenkins Brothers of New York. The valve is especially recommended for severe service such as continuous throttling for pressure reduction or free blow duty, as soot blowers, injectors, heating coils, or steam lines where close regulation is required. It is declared by the manufacturers that their JX500 plug and seat practically nullify wear and entirely eliminate danger of wire drawing and cutting.

Jenkins Brothers also announce that users of their Standard Bronze Valves will now have the advantages of three new developments making for more convenience and better service. These improvements include a new handwheel design of unusually large gripping area without bulkiness; a new valve index plate to aid in ordering replacements, and a new renewable composition disc.

Thermolier De Luxe Unit Heater

Proclaimed as one of the most important developments since it began manufacturing the well known "Thermolier" Unit Heater, Grinnell Company, Inc., Providence, R. I., announces the Thermolier De Luxe Type, created by leading industrial designers for unit heater installations where appearance is a major factor. Enclosed in a modern housing finished in crackle black and satin chrome, the Thermolier De Luxe embodies the tested heating unit of the Thermolier Industrial and Factory types and has the fourteen engineered features of previous Thermoliers, with improved heat distribution by new angular louvers which provide widespread heat flow. Inlet and outlet pipes have been relocated at the rear and the specially-designed motor and fan are concealed. It is recommended for stores, shops, offices and similar locations.



Thermolier De Luxe Heater

Telechron Clock and Time System

In a special panel display at its factory in Ashland, Mass., the Warren Telechron Company shows a number of special clock and time system items which reveal the adaptable nature of modern industrial designing. Dominating the group is the company's big "Lite-Time" gas tube illuminated model for signs and advertising displays. Telechron's special equipment line is featured by the Multiple Circuit Program Instrument, a complete, self-contained device for controlling class room or plant time schedules.

Wire Rope and Strand *now products of Bethlehem*



WITH the recently-announced acquisition of Williamsport Wire Rope Company by Bethlehem Steel Company, Bethlehem becomes a manufacturer of wire rope and strand.

For years the name Williamsport has been identified with dependable wire rope and strand. Not only to men who have been using Williamsport products, but to all other wire rope and strand users, Bethlehem's entry into this field marks an important forward step.

As Williamsport Wire Rope becomes Bethlehem Wire Rope, customers of Williamsport Wire Rope Company can look with assurance to Bethlehem to maintain the quality standards associated with Williamsport products. Advantages to the user may naturally be expected to ac-

cruer from the broader manufacturing and servicing facilities offered by the Bethlehem organization.

Customers of Bethlehem Steel Company can now obtain a complete line of wire rope and strand from the same source which furnishes their other steel requirements, and made to the same quality standards as those that govern in the manufacture of Bethlehem alloy and tool steels, plates, sheets, and other products.

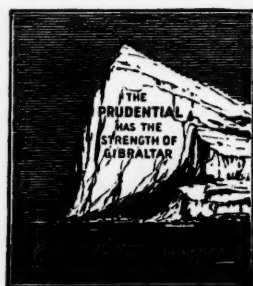
Wherever and however you use wire rope and strand you will find Bethlehem a source of well-made, dependable material, serviced by men whose long, first-hand experience in analyzing and solving wire-rope problems is a background for authoritative recommendations on the most suitable grade of Bethlehem Wire Rope for any task.

BETHLEHEM STEEL COMPANY

Auxiliary pension plans for employees.

Employers seriously considering provisions to supplement the governmental benefits are invited to make use of our Group Annuity Consultation Service.

Plans are available for
a well-rounded program.



THE PRUDENTIAL
INSURANCE COMPANY OF AMERICA
EDWARD D. DUFFIELD, President
HOME OFFICE, NEWARK, N. J.

» » » Finance « « « AND KINDRED SUBJECTS

Diversion of Social Security Funds

Reserve funds set up under the Social Security Act, according to recent Washington press dispatches, have already accumulated in the amount of nearly a billion dollars. Nearly a third of the billion accrued during the first quarter of the current fiscal year, and the rapidity with which the fund will grow after January 1, 1938, will be greatly increased as the tax rate to both employer and employee goes up.

The treatment of the money collected for this fund, which was supposed to be held in trust for the beneficiaries under the Act, has been sharply criticized by those who feel that it should not be used to pay current government expenses. Funds collected as a trust cannot morally be diverted for other purposes and yet, studying the act itself, it will be seen if not designed with that in view it is legislation of a complicated type.

Commodity Price Trend

For the last six months, commodity prices have registered a steady, continued decline, amounting to about 25% since last April according to Moody's Index of sensitive commodities. The action bears out the fallacy of trying to lift prices artificially and is attributed to the withdrawal of direct government subsidies on agricultural products and elsewhere, as well as to a general curtailment of government financed construction and relief expenditures, all of which tended to hold prices at a higher level than otherwise justified.

The experience duplicates other attempts to alter the natural functioning of the laws of supply and demand, of which the Federal Farm Boards' operations during 1929 were a notable example.

The Stock Break

As the month closed, definite reasons were still being sought for the decline in share markets. Students of finance have estimated the losses incurred as running from fifteen to twenty billion dollars. The S. E. C. is reported to have under consideration the investigation of short selling on the New York stock exchange.

While the business news has not been as favorable as it was, it could hardly account for the throwing over of stocks in the way that took place, so that inquirers are getting back to what has taken place in the way of legislation and threats to business as reasons for the decline, and are also wondering what Wall Street is discounting, because that is usually Wall Street's way.

There is no doubt of the fact business could proceed with more confidence and determination if it could figure some reassurance in the purpose of government.

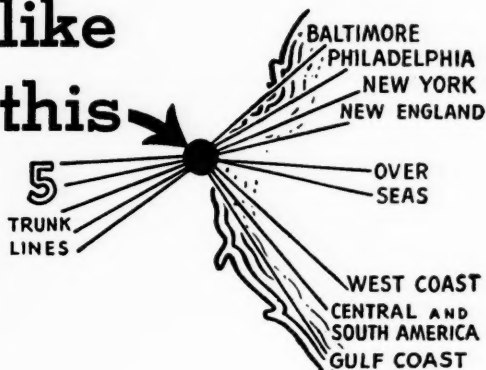
New Accounts

Earl B. Schwulst, first vice-president of the Bowery Savings Bank, New York City, at the convention of the Savings Banks Association of the State of New York, proposed a new type of account to compete with U. S. Baby Bonds.

This type of account would involve a contract between the bank and the depositor whereby the depositor could not withdraw his money without first notifying the bank in writing. On this type of account the banks would pay a higher rate of interest. These accounts would compare with baby bonds in that they would be on a five or ten year term. As these accounts would have no definite maturing date, the banks would not have to build up a fund to meet such maturing obligations as they would have to do if certificates were issued with a definite maturity.

(Continued on page 58)

**"Chief, suppose we could get
a Location
like
this**



Write for the Facts about Savannah and Port Wentworth

The industrial sites of the Port Wentworth Corporation are just outside the city limits of Savannah, on the deep water of the Savannah River, and superbly located for rapid movement of both raw materials and finished products. Savannah is served by 5 trunk line railroads. Its large, sheltered harbor is the principal ocean outlet for the Southeast and it is fully equipped with docks, warehouses and other modern facilities for coastwise and overseas shipments.

In the State of Georgia is mined almost every mineral used commercially. Unlimited timber acreage is available at low cost. Here grow cotton, fiber, tung trees, soy beans and sweetpotatoes—all of which chemical research is today using to revolutionize industrial manufacture.

Skilled, semi-skilled and common white American labor and also good colored labor is abundant. Housing facilities are ample and living expenses are low. Savannah has always enjoyed a freedom from strikes.

The saving in power and heating costs alone is considerable. Nearness to raw materials and accessibility to the great markets of the world cut transportation costs drastically. New industries are exempt from taxes for five years.

Submit the physical and material requirements of your company and let us furnish, without obligation, up-to-date information bearing on the possibilities for your particular industry in the Savannah-Port Wentworth area. Inquiries are treated confidentially.

PORT WENTWORTH CORPORATION

Offices
Savannah, Ga.

17 East 42nd Street
New York City

WRITE TODAY for our Free Booklet:
"Factors in Industrial Location." Full
of interesting facts.





STANDARDS

ACI Quality Coals are well known as the "standards by which industries measure bituminous coals." Mined in the high volatile districts of eastern Kentucky, eastern Tennessee, south-western Virginia and southern West Virginia, these standardized products have gained national recognition for purity, economy, steady demand.

Industries purchase ACI Quality Coals on the same simple basis as they buy brick, copper, iron, rubber, steel and other materials.

Appalachian Coals, Inc., and our 134 constituent producing and selling companies offer a real service to fuel buyers. It is designed to improve the economy and utilization of the **finest bituminous coals in the world.**

Contact this office. We are ready to help you simplify your own coal selection and utilization problems. We also offer a merchandising service to retail coal merchants.

Names of our producing companies, which mine ACI Quality Coals, prepare them for market and place the ACI organization at your disposal, are available on request. Also, write for your copy of "Where to Buy ACI Quality Coals."

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Drawing Instruments, Slide Rules, Planimeters, Drawing and Tracing Papers, Drafting Room Furniture, Surveying Instruments, Tapes.



PIGMENT Waterproof Drawing Ink
in black and white and a wide range of **OPAQUE COLORS.** Catalogue sent on request. Inquiries solicited.

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Correspondence invited

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President
BALTIMORE, MARYLAND

Member Federal Reserve System
Member Federal Deposit Insurance Corporation

"Finance and Kindred Subjects"

(Continued from page 58)

Bank Assets

The Comptroller of the Currency released statistics last month, later to be included in his annual report to Congress, showing that the 15,580 banks in the country had total assets amounting to \$68,941,000,000. Government securities held were \$14,569,000,000, and state, county and municipal bonds \$3,572,000,000.

Farm Income

The Bureau of Agricultural Economics reports farmers' cash income for the first nine months of this year totaled \$5,825,000,000, which was \$600,000,000 more than the same period last year.

The principal farm products sales for August in the eleven cotton growing states showed an increase of \$41,881,000 according to federal economists, bringing the total for the first eight months of the current year to \$853,356,000 as compared to \$681,857,000 for the corresponding period of 1936.

The August totals are: Alabama, \$5,140,000; Arkansas, \$3,327,000; Florida, \$3,757,000; Georgia, \$20,359,000; Louisiana, \$5,149,000; Mississippi, \$5,057,000; North Carolina, \$15,063,000; Oklahoma, \$18,433,000; South Carolina, \$11,868,000, and Texas, \$47,714,000.

Railroad Financing

The Southern Railway announced at the annual stockholders meeting, October 19, that it had secured a commitment from the Reconstruction Finance Corporation to enable the company to meet its maturities of 1938 and 1939, provided the road was not able to secure satisfactory terms through private banking channels.

The Railroad Credit Corporation has stated that of the 53 railroads to which the Corporation made loans in order to meet fixed interest obligations, 33 have paid in full. A total of \$73,691,000 was loaned, of which \$52,542,000 have been repaid.

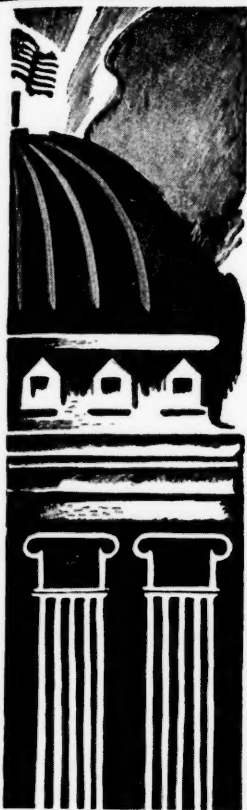
Oil Profits and Production

One of the encouraging reports in the financial press relates to the oil industry. The demand for oil products is now at high levels, and the opinion is general that the leading petroleum companies will probably have the best year, from a profit standpoint, that they have had for several years. While 1936 was the best year since 1929, it is believed the current year will go 25 per cent above last in net.

Production of crude oil is now averaging over 350,000,000 barrels a day. Gasoline prices show no sign of weakening as consumption of refined oil products keeps at a high point. In the meantime, the search continues for new, profitable producing areas.

Cotton Control

Secretary Wallace has announced as part of the agricultural control program a decrease of 2,000,000 acres of cotton land for 1938. The total acreage is now reduced to between 27,000,000 and 29,000,000 acres, but the rate of payment is set at 2.4 cents per pound instead of 2 cents. The increase in payment is due to the decrease in acreage, and that in turn is due to the fact that this year the cotton crop will exceed by 1,500,000 bales the original estimate of 16,000,000.



ONE OF A SERIES, "A FIVE-YEAR RECORD"

TAXES INCREASE 67% IN 5½ YEARS

AN INCREASE of 67% in taxes on companies in the Associated System was recorded between 1932 and June 1937. In the 12 months ended June 30, 1937 alone the increase over the previous similar period was 22%.

In one large company, taxes exceed the total electric revenue from residential customers for all types of service in the home.

More than 40 different kinds of taxes are levied upon companies in the Associated System. There are in addition many fees, duties, and levies paid to regulatory bodies.

The contribution to the cost of government which Associated companies have been asked to make has increased rapidly in recent years, as the following table shows:

1932	. . . . .	\$10,125,000
1933	. . . . .	11,131,000
1934	. . . . .	12,938,000
1935	. . . . .	13,750,000
1936	. . . . .	15,135,000
1937*	. . . . .	16,965,000

*12 months ended June



ASSOCIATED GAS & ELECTRIC SYSTEM

NATURAL GAS

May enable you to learn more about your business.

Charts from gas meters set in manufacturing plants showing the fuel used in relation to time intervals, frequently indicate the need of changes in process, time cycles, or operating schedules.

Savings resulting from these changes, where needed, are always of value.

.

SOUTHERN NATURAL GAS COMPANY

Watts Building

Birmingham, Ala.

INDUSTRIAL NEWS

Missouri Pacific Operations

Operating revenues of the Missouri Pacific Railroad for September amounted to \$7,772,154, compared with \$7,933,416 for September, 1936. Of this amount, freight revenues amounted to \$6,651,003 in September of the current year, compared with \$6,854,978 for September, 1936, while passenger revenues totaled \$491,543 in September, 1937, compared with \$459,497 for September, 1936. For the first nine months of 1937, operating revenues amounted to \$69,733,600, compared with \$65,676,220 for the similar period in 1936.

Factory and Office Drinking Fountains

As a contribution to the health, comfort and efficiency of employees, Crane Company, Chicago, Ill., has introduced six new drinking fountains for factory and office, made of vitreous china and sculptured in a modernistic, easy-to-keep-clean design that is rugged and attractive. It offers the Erie line in three models; the Ontario fountain with two bubblers, similar to the Erie except that it is of the roll rim type supported on brackets,

and two fountains in the Oasis model. In all models the bubblers are located above the rim to prevent back-siphonage.

Chemical Industries Exposition

Ingenuous operating exhibits revealing latest developments in the fields of chemical raw materials, consumer goods, and plant equipment will be featured at the Sixteenth Exposition of Chemical Industries, to be held at Grand Central Palace, New York, during the week of December 6 to 11. Three floors have been reserved for the Exposition, and indications point to a larger number of exhibits, as well as a greater variety of products. On Monday evening, December 6, Norman E. Diehl, Assistant Division Purchasing Agent, E. I. duPont de Nemours & Co., Wilmington, Del., will be awarded first prize of \$250 for the best slogan for the chemical industries. Charles F. Roth, president of the International Exposition Company, will be in direct charge of the Exposition.

These 7 INTERCHANGEABLE MOUNTINGS



save you money

P & H HOISTS

Any size P&H Hoist is available with these standard types of mountings:

1. Bolt or lug suspension
2. Hand-gear trolley
3. Plain trolley
4. Hook suspension
5. High lift
6. Motor-Driven trolley
7. Base Mounted

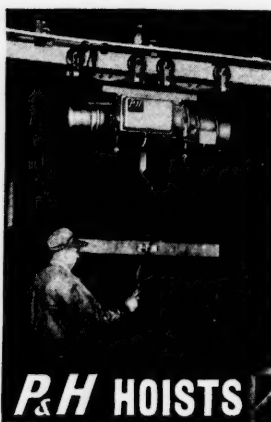
Through modern, simplified design, P&H Hoists are available with interchangeable mountings to meet all sorts of material handling applications. This feature makes it possible to change from one type of service to another at a minimum of time and expense. Check into the other money-saving features P&H Hoists offer you.

Send for New Catalog

A post card is the easy way to get your copy of the complete, new P&H Hoist Catalog. Write for Bulletin H-5. Address the Harnischfeger Corporation.

4427 W. National Avenue Milwaukee, Wis.

Handle it "Off the Floor" with



P & H HOISTS

HARNISCHFEGER CORPORATION

HOISTS • ELECTRIC CRANES • P&H MOTORS • ARC WELDERS • EXCAVATORS

Fairbanks Printomatic Weigher

Designed to eliminate errors in reading and recording weights, as well as to save time, the Fairbanks Printomatic Weigher is described in detail in the October issue of the house organ of Fairbanks, Morse & Co., Chicago, Ill., manufacturers of this modern scale which has solved the problem. It is claimed, of weighing and keeping an accurate record of castings as they leave the plant foundry. It is also applicable to many other industrial uses.

Heating and Ventilating Exposition

Winter heating of homes, public buildings, and factories, and air-conditioning on a year 'round basis are themes to be coordinated and simplified at the Fifth International Heating and Ventilating Exposition to be held at Grand Central Palace, New York, during the week of January 24 to 28. The Exposition will be under the auspices of The American Society of Heating and Ventilating Engineers, whose forty-fourth annual meeting will be held in New York during the same week. Charles F. Roth, president of the International Exposition Company, Grand Central Palace, will be in personal charge.

Hercules Powder Earnings

For the first nine months of 1937, net earnings of the Hercules Powder Company, Wilmington, Del., amounted to \$4,283,823, after providing for depreciation and Federal taxes. After payment of \$393,696 preferred dividends, these figures equal \$6.57 a share on an average of 592,527 shares of common stock outstanding during the period. This compares with \$4.23 a share earned on an average of 583,870 shares of common stock outstanding during the first nine months of 1936. Net earnings for the third quarter of 1937 were \$1,246,811, compared with \$1,159,405 for the corresponding quarter in 1936. Regular preferred dividends and \$4.50 a share on the common were paid during the first nine months of 1937.

Arc Welding Award Excites Interest

Governors of twenty-nine states have expressed interest in the \$200,000 Award Program of The James F. Lincoln Arc Welding Foundation, of Cleveland, Ohio, according to Secretary A. F. Davis. At a meeting of the Foundation's board of trustees at Cleveland on October 8 there were present Dr. E. E. Dreese of Ohio State University, chairman of the Foundation Jury of Award; W. B. Stewart, Cleveland attorney, and H. R. Harris, vice president of Central National Bank, trustees; Mr. Davis and E. C. Powers, assistant secretary of the Foundation. The Award Program, first activity of the Foundation's plan to encourage scientific progress of arc welding, closes June 1, 1938.

Baltimore and Ohio Loadings

Carloadings on the Baltimore and Ohio Railroad for the week ended October 23 totaled 49,950, including 32,065 cars loaded on line and 17,884 received from connections. For the corresponding week in 1936, the total was 54,003, covering 36,325 loaded on line and 17,678 received from connections.



Here is the only fence fabric made of the new patented KONIK steel—a stronger steel that is rust-resistant clear through... Continental galvanized—heavy, uniform coating. Get new manual, "PLANNED PROTECTION" free on request:

CONTINENTAL STEEL CORP.

Kokomo, Indiana

Plants at Kokomo, Indianapolis, Canton

CONTINENTAL *Chain Link* FENCE

WE ARE PREPARED TO FURNISH
YOUR REQUIREMENTS FOR

ROOFING TILE
QUARRY FLOOR AND WALL TILE
CHEMICAL BRICK and
ACID RINGS

Samples or any information gladly
furnished upon request.

B. MIFFLIN HOOD COMPANY
DAISY, TENNESSEE

59 YEARS OF WOOD-TREATING EXPERIENCE

are behind the service of Eppinger & Russell Co. Industrial and commercial lumber of all kinds is made immune to termites and dry rot by pressure-treating with ZMA or Creosote. Consult Eppinger & Russell Co. on your requirements in poles, posts, piling, cross ties, cross arms and other timber. It will add 8 to 20 times the natural life to any woods you have treated by this low-cost, dependable process.

PRESSURE-TREATING PLANTS AT:
Jacksonville, Fla., and Long Island City, N. Y.

WOOD PRESERVERS SINCE 1878
EPPINGER & RUSSELL CO.
84 Eighth Ave., New York City

2000 TONS OF RAIN IN 10 YEARS—

—and the roof is still good

In Birmingham stands a house shingled in 1927 with Certain-teed Universal Shingles. Although 2000 tons of rain have fallen on it and hot Southern suns have beaten down on it, it appears to be good for many more years of economical, trouble-free service.

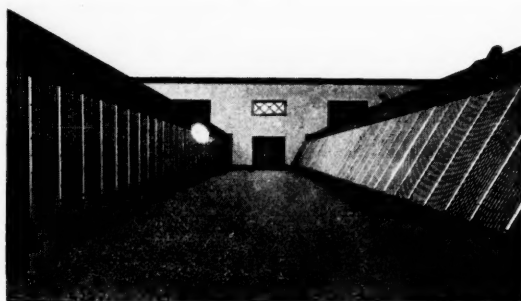
This house is only one of thousands giving satisfaction, with economy, under difficult conditions.

For roofs that stand up, in mill towns or elsewhere, insist on Certain-teed and Vulcanite Roofing or Shingles.

CERTAIN-TEED PRODUCTS CORP.

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**CERTAIN-TEED - SOUTHERN MADE
FOR SOUTHERN TRADE**



Air Corps Shops and Hangar, Middletown, Pa.
42,000 sq. ft. CWG in Monitor Construction

SPECIFY ORIGINAL SOLID CORRUGATED WIRE GLASS

It diffuses light with a minimum of shadows. It is practically self-cleaning and can be used on a roof of any material and supply daylight in manufacturing and industrial plants—an important factor in all modern production.

Also used with excellent results on sidewalls, mar- quises, canopies and wherever daylight is needed.

Our Engineering Service Department can aid you on your skylighting problems. Write or wire.

PENNSYLVANIA WIRE GLASS CO.

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TRADE LITERATURE

MacRae's Blue Book—For the past three years the publishers of this volume have been making a survey as to what purchasing and specifying officials desire in a buyers' guide, seeking information from officials of the largest companies. During this period a progressive "rebuilding" of the publication has been going on with the result that many improvements have been made in the 1937-38 edition. The volume has been thoroughly checked, revised, and brought up-to-date, and more than 300,000 changes have been made in the Classified Material Section alone. It is published by MacRae's Blue Book Company, Chicago, Ill.

Chemical Engineering Catalog—This process industries' catalog for 1937 is the twenty-second annual edition of the publication. It presents collected, condensed and standardized data on equipment, machinery, laboratory supplies, heavy and fine chemicals and raw materials used in industries employing chemical processes of manufacture. With classified indexes of such equipment and materials, carefully cross-referenced, it also presents a technical and scientific books section which catalogues and briefly describes a most complete list of books on chemical and related subjects. It is published by Reinhold Publishing Corporation, New York, N. Y., and is from the press of The Haddon Craftsmen, Inc., Camden, N. J.

"How To Drive"—Under the foregoing caption, the American Automobile Association, Washington, D. C., has issued the fifth of a series of booklets on Sportsmanlike Driving. This publication is the outgrowth of five years of development and is based upon experiences of Prof. Amos E. Noyhart of the Pennsylvania State College. It is designed for use in driver education and training classes in high school. Other booklets in the Sportsmanlike Driving Series are: "The Driver," "Driver and Pedestrian Responsibilities," "Sound Driving," and "Society's Responsibilities."

Practical Office Management—This is a 300-page volume, with 31 illustrations, dealing with "The Correlation of Men, Methods, and Machines," by Harry Wylie, B.S., Chief Accountant, The Pure Oil Company; Lecturer in Business Organization at Central Y. M. C. A. College and De Paul University; Merle P. Gamber, A.M., Acting Dean, School of Commerce of Central Y. M. C. A. College, and Robert P. Brecht, Ph. D., Assistant Professor of Industry, Wharton School of Commerce, University of Pennsylvania. There is a foreword by Alvin F. Dodd, American Management Association. Combining the "ideal and practical philosophies" of office management, the publication presents a systematic approach to the study of office problems, the premise of the book being that the problems of office management are associated with the problems of men, methods and machines. The price of the volume is \$4.00.

"Results of Municipal Lighting Plants"—Under this title, "Results of Municipal Lighting Plants," the Burns & McDonnell Engineering Company have issued the 1937 or fifth edition of an electric rate book showing what 511 representative cities pay for electricity under public ownership.

The past year has brought about many drastic rate changes, both in private and municipal plants. The new book covers 511 cities—many more than the 1935 edition.

The volume of 230 pages is a unique and informative record of the rates, earnings, operating expenses, profits, kilowatt-hour production, valuation, and other information pertaining to the use and cost of electricity. City officials, operators and managers will find it indispensable. It is the only record available and published covering municipal plants and their recent rate changes.

The book may be procured at a cost of \$2.00, prepaid, by writing the authors, Burns & McDonnell Engineering Company, 107 West Linwood Boulevard, Kansas City, Missouri.

ARC WELDING—

Catalogue—"Arc Welding With the New 40 Volt Simplified Arc Welder," showing uses of Hobart's new Motor Horsepower Control in this modern welding equipment, with details of internal construction.

The Hobart Brothers Company, Troy, Ohio.

OILGEAR FLUID POWER PRODUCTS—Bulletin 47000—devoted to OILGEAR equipment and applications, illustrated. The Oilgear Company, Milwaukee, Wis.

LUPTON STEEL PRODUCTS—RESIDENCE CASEMENTS—

Booklet—devoted to Lupton steel window products, including projected windows, pivoted windows, continuous windows, window operators, steel tube doors, steel skylight.

Booklet—devoted to Lupton residence case-

ments. Michael Flynn Manufacturing Company, Successors to David Lupton's Sons Co., Philadelphia, Pa.

HIGHWAY SAFETY—

Booklet—illustrated, devoted to ARROWAY Signals which direct as they signal traffic, pointing out their efficiency in preventing accidents at highway intersections.

Arrowway Traffic Signal Corporation, Kingsport, Tenn.

Davison's Textile Blue Book—72nd Year Edition with which is merged Dockham's American Report and Directory; Complete Register of Textile Industry for 1937; Davison Publishing Co., 50 Union Square, New York, publishers; Prices, Office Edition \$7.50, Handy Edition \$5.00; Salesmen's Directory \$4.00; Foreign, 50 cents extra.

Reports in detail cover: 2405 Cotton Mills; 950 Woolen and Worsted Mills; 159 Carpet and Rug Mills; 1577 Rayon and Silk Mills;

2159 Knitting Mills; 171 Jute, Linen, Flax, Sisal and Hemp Mills; 559 Canadian Mills; 480 Mexican Mills; 1562 Mills Operating Own Dye Houses; 719 Dyers, Finishers, Bleachers and Printers. Looms, spindles, cards, combs and other machinery have been tabulated by states and are shown in special tables. Interesting features of the publication are: Textile Associations; Index to Raw Cotton Merchants; Cotton Warehouses with Insurance Ratings; Personal Revision of Foreign Cotton Firms' Reports. Another valuable department is a section showing mills with dye houses, which should be useful to chemical and dye-stuff firms. A classified directory of dyers and finishers is also presented.

J-M INDUSTRIAL PRODUCTS—

Catalog—1937-1938 edition, devoted to Johns-Manville industrial products. Johns-Manville, 22 East 40th Street, New York.

BRADLEY PRODUCTS—

Catalog No. 937—devoted to Bradley Washfountains, Multi-Stall Showers, Drinking Fountains and other fixtures, with specification data and washroom planning information.

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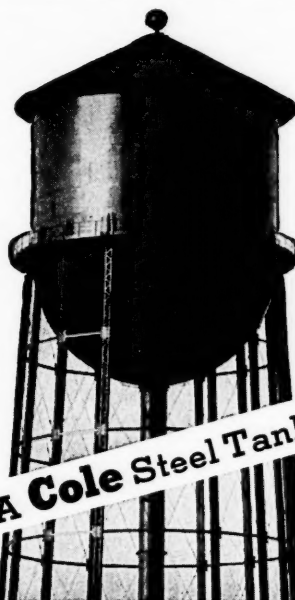
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The train hits the forest in the center and cuts a path to the heart of Oklahoma City. On both sides of the rails, down almost to the business district, are the tall trussed spires symbolic of the nation's second industry—oil.

Transportation planted the seeds of this jungle, making possible your swift and comfortable trip through its shadows. The railroads brought in that lumber and machinery, iron and manpower; and they carry to the nation's markets the thousand and one by-products of petroleum.

These wells near Oklahoma City represent only a part of the great mid-continental oil fields, but in other portions of the area the railroads are equally as close to the source of the raw product. Frisco tracks spread fanwise over the densest part of the field bringing world petroleum markets as close as your railroad siding.

This mid-continental field, rated the largest oil-producing unit in the world, touches 11 states, but the bulk of its wealth is in Kansas, Oklahoma and Texas, where the Frisco has more than 2,000 miles of track. This oil development was slow, one of the big factors in its sporadic and almost insignificant early growth being lack of transportation facilities for both material and product. Its primitive period lasted from 1864 until 1904, a period contemporaneous with the kerosene age dominated by the Eastern oil fields.

It is significant that in March, 1900, the construction of a railroad line from

BY
J. R. Koontz
Chief Traffic Officer
St. Louis-San Francisco Railway

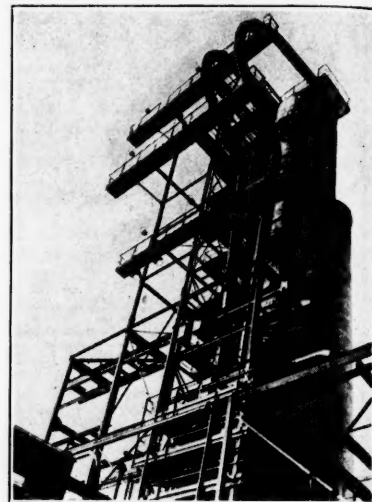
Sapulpa, Okla., to Denison, Texas, was begun. The 198 miles of rail were laid in a year, and the Frisco was ready for the boom that was soon to come. As it does today, oil then furnished an important part of the railway's tonnage.

Besides inadequate transportation, another factor hampered early growth of the mid-continental field, and that was the lack of a consistent market. Eastern production just about met consumer demand.

But with the change from the kerosene age to the gasoline age around 1904, the mid-continental fields came into their own. The automobile found a hungry market and the lavish petroleum yield of the Southwest, coming at an opportune moment, made possible the tremendous automotive expansion the United States experienced.

As an example of what happened, Oklahoma's production up until 1905 was about 10,000,000 barrels, most of which came from shallow wells near Bartlesville and Tulsa. Then came the discovery of the Glenn Pool near Sapulpa, which was brought to its peak of 117,440 barrels a day in 1907. Here Oklahoma's history as an oil state really began, the production in 1906 being 18,700,000 barrels, and in 1907 more than 43,000,000 barrels. It produced more than 185,000,000 barrels in 1935.

Production in the district increased rapidly with the bringing in of wells in Texas and Kansas. In 1910 in the mid-continental area approximately 59,276,000 barrels were produced, and in 1936 nearly 143,000 oil wells produced 670,684,000



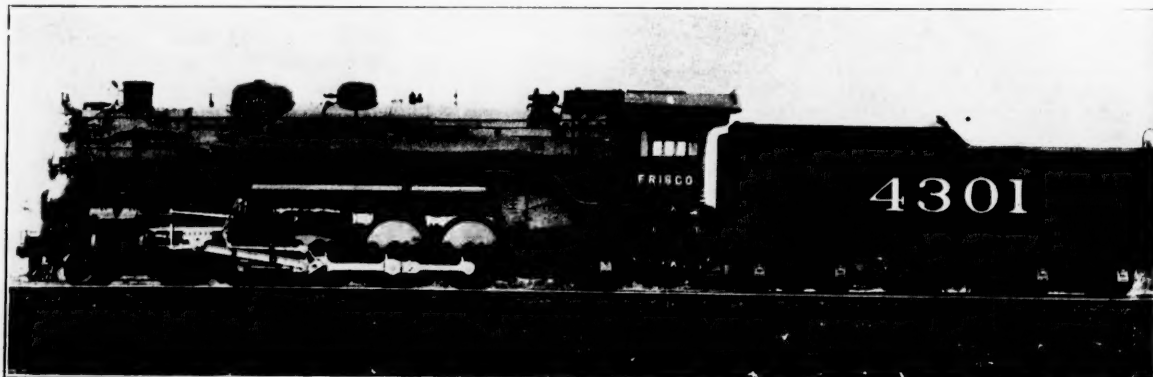
barrels of crude. Approximately nine and one-half billion barrels have been taken from this field, according to the records of the Mid-Continent Oil and Gas Association.

An idea of the value of this oil may be obtained from figures compiled in 1931 for Oklahoma. At that time the Sooner state had produced more than three billion barrels of crude with an estimated value of more than four and one-half billion dollars.

The importance of this petroleum empire in the southwest is indicated by its relative world size. The mid-continental district occupies less than one per cent of the world's land area and produces 40 per cent of the world's oil. It comprises 14 per cent of the area of the United States and produces more than 60 per cent of its oil.

The question is sometimes raised as to whether the mid-continental field will re-
(Continued on page 76)


Above—Continuous distillation unit, 120 ft. high, at Mid-Continent Petroleum Corp., refinery for separating crude oil into its component parts. Below—Latest model Frisco heavy duty freight locomotive



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New Uses for Cotton

(Continued from page 34)

ton mills, nearly 150 of the country's leading cotton shippers, and numerous cotton futures brokers, warehouse and compress firms and mill selling agents, all subscribing to the common fund on the "cent-a-bale" or other appropriate bases.

Participating mills and their cotton shippers, for instance, each contribute one cent a bale on each bale of cotton shipped to and processed by the cooperating mills; futures brokers are contributing an agreed lump sum on each 50- or 100-bale transaction; and other contributors participate through other adaptations of the "cent-a-bale" plan.

The program itself is not new. It is rather a broadening and intensification of activities, the results of which have demonstrated that the surface of possibilities for increased consumption has only been scratched. It is safe to say that, in the apparel and household fields, consumers are "cotton conscious." They will be kept so by the expanded promotional and educational program which includes not only cooperation with fashion stylists and interior decorators, clothing and home economics teachers, extension workers and similar key consumer contacts but also cotton fashion shows, traveling loan exhibits of cotton fabrics and, of course, the annual National Cotton Week.

The availability of large quantities of cheap, low-grade cotton has, however, served to center more attention at the moment on efforts to regain markets lost to other fibers or substitutes and on new use possibilities that promise outlets for millions of bales of cotton. In other bumper crop years, cotton textiles have held their own against jute in various fields and it seems probable that again the price differential between the two fibers, now unusually narrow, will be outweighed in favor of cotton by other considerations including re-use value and lightness of weight.

Interestingly enough, the shift to cotton from jute is beginning right in the mills. Many cotton mills are planning to bale their finished cotton piece goods in cotton osnaburg which they can produce in their own plants in preference to burlap—a development which, if it is adopted generally throughout the industry, will absorb many thousands of bales of the cheaper grades of cotton.

Similarly, the use of cotton fabric for covering raw cotton bales would account for more than 100,000 bales of cotton. The use of cotton for bale coverings probably will not become standard practice until trading is established on a net weight rather than a gross weight basis. But, in the meantime, the industry has cooperated with the Department of Agri-

culture in the development of a cotton bagging fabric suitable for the purpose and quantities sufficient for demonstration baling of more than 17,000 bales have been allocated to Department experimental stations and prison farms in several cotton-growing states.

There are encouraging prospects that the sale of cotton bags will greatly increase in other fields where more than 600 million pounds of jute are used annually in the United States for packing a wide variety of farm products and supplies. Over 100 million pounds of jute are used for fertilizer bags alone—and the cotton farmer is the largest single buyer of fertilizer in the United States! If cotton farmers can be brought to demand their fertilizer in cotton bags they will open up a tremendous market for their cotton.

No less important is the substantial expansion, under the new program, of activities which have already achieved marked successes in the development of wholly new outlets for cotton. Outstanding among these achievements, as has been pointed out, is the now general recognition of the practicability of cotton fabrics as road construction material, and the growing interest of architects and builders in cotton-covered houses for low-cost industrial housing projects.

Nearly 600 miles of cotton fabric reinforced bituminous surfaced highways were built in twenty-two states in 1936, the construction utilizing fabric supplied gratis by the federal Bureau of Public Roads in connection with the Department of Agriculture's \$1,300,000 demonstration program which climaxed nine years of promotion of the idea by the Cotton-Textile Institute.

The importance of this single outlet for cotton in the construction of cotton reinforced roads may be visualized in the fact that every mile of road so reinforced absorbs the equivalent, in fabric, of from eight to ten bales of cotton, and that, in addition to the some 45,000 miles of now improved bituminous roads which are resurfaced annually, there are more than 2,000,000 miles of unimproved dirt roads in the country to which the cotton reinforcing method is adaptable.

With the Institute's cooperation, the same construction technique employed in the building of "cotton roads" is being utilized in the building of airport runways and in the reinforcement of bituminous linings of malaria control, soil erosion and irrigation ditches. Large scale experiments to demonstrate the greater efficiency of cotton-covered and cotton-filled mats for "curing" concrete pavements will be continued.

Intensive promotion of the practicability of cotton-covered houses is a major phase of the program. Two houses demonstrating the practical advantages in the application of cotton duck to out-

side wall and roof surfaces, have been erected at Northport, L. I., New York and plans are being developed for similar constructions of more extensive scope in other centers. The potentialities of this cotton house idea carried into the construction of trailers, summer cottages and beach cabanas are obvious.

Largely the result of the Institute's emphasis on the importance of the problem of increasing cotton consumption and with the Institute's cooperation, the Department of Agriculture has launched a broad-scale new uses program. Cotton fabrics supplied gratis by the Department are to be used to demonstrate the practicability of those fabrics in a variety of uses including, in addition to "cotton roads," cotton houses and ditch lining reinforcement and cotton bale covering, their use to protect tree seedlings, fruit and certain other farm products during ripening and harvesting and even as a protection for colonies or hives of bees.

No possibilities are being overlooked. In the field of industrial uses there are innumerable opportunities to expand the consumption of cotton. For example, a survey of the present and potential market served by the linen supply trade disclosed amazing possibilities for an increased use of cotton textiles in the extension of towel, coat and apron supply services and in the uniforming of workers in scores of industries, trades and professions. As a result of the survey, sponsored by the Institute and the Linen Supply Association, a joint promotional campaign is under consideration.

The use of small-size cotton bags for packaging fruits, vegetables and other commodities in small retail sales units and the packaging of cement in cotton bags are important objectives in the program. Again in cooperation with the Department of Agriculture and the Cuban-American Sugar Company, the Institute is testing the practicability of heavy cotton sugar bags. Five hundred such bags are now in actual service for transporting raw sugar from Cuba to Louisiana and it is anticipated that the result will be a convincing demonstration of the superiority and economy of cotton bags over jute bags.

Herbert Charles Ballord

Herbert Charles Ballord, Baltimore branch manager for the Crucible Steel Company of America, died October 22 at a local hospital. Mr. Ballord had been connected with the Crucible organization for the past thirty years.

He was a member of the American Society for Metals and served as chairman of its Baltimore branch. He was born in Ashford, Kent, England, from where as a boy he moved with his parents to Syracuse, New York. He had been failing in health about a month previous to his death.

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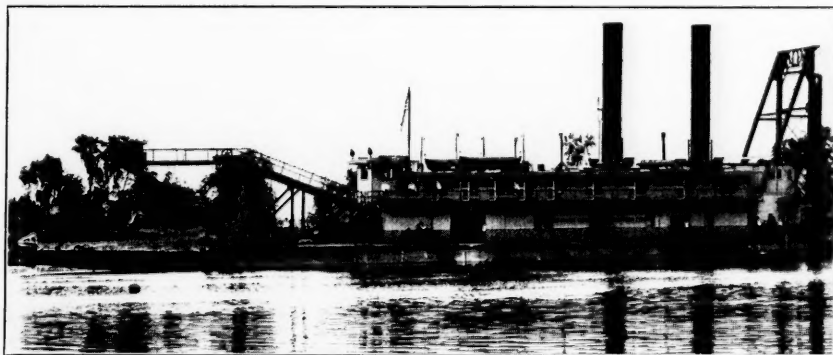
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Complete Wire Cloth Mill Built at Savannah

Wide Scope of Plans of Robert M. Nelson, Guiding Spirit of the Port Wentworth Corporation

THE first complete wire cloth mill of its kind has been opened at Savannah, Ga., by the Savannah Wire Cloth Mills, a division of the Port Wentworth Corporation. The news of its buildings, equipment and power plant necessary in the carrying on of the work of an establishment of this kind has been published in the MANUFACTURERS RECORD's Daily Bulletin of Construction.

This important enterprise is part of the plans for a community of coordinating businesses contained in the objective of the Port Wentworth Corporation, over which Robert M. Nelson presides.

The picture of creative industry, which will mean much to Savannah and the entire South, of which the wire cloth mill is but one item, includes plans of far-reaching extent. For example, another property is the Savannah and Atlanta Railway, now in course of reorganization under a plan which Mr. Nelson formulated in conjunction with two bondholders' committees. The Port Wentworth Corporation will control the railway upon completion of the latter's reorganization, and this will probably be consummated early in 1938.

Mr. Nelson is President of the Port

Wentworth Corporation, and will continue to be Chairman of the Board of the Railway after it is reorganized. Charles E. Gay, Jr., Trustee, will be President of the Railway, as well as chief operating officer. Mr. Nelson's first interest in the Railway was as an investor. In 1934 when the Port Wentworth Corporation was organized it took over all the Georgia properties of a company of similar name, the Port Wentworth Company. The latter concern in turn had previously succeeded the Port Wentworth Terminal Corporation, which was organized in 1916.

In close work with Dr. Chas. H. Herty of Savannah, it was through Mr. Nelson's efforts that the first test commercial run of Southern pine pulp into newsprint was made at the mills of the Beaver Wood Fibre Company, Ltd., in Thorold, Ontario, of which Mr. Nelson was at that time Secretary-Treasurer. From that point of genuine progress was made in showing the commercial feasibility of making newsprint from Southern pine. Mr. Nelson shares with Dr. Herty a keen hope that a newsprint mill will be built in Savannah.

Robert M. Nelson was graduated from Harvard in 1913. He studied law and was admitted to practice before the Supreme



Bachrach

Court of the United States. Commencing in 1914 he was with the Certain-teed Products Corporation for many years, resigning as Vice President and Treasurer December 31, 1936, to devote more time to the development of his various interests.

His long experience in financial, legal and industrial problems should stand him well in the development of the Port Wentworth-Savannah area. He has been instrumental in bringing several industries there in the past several years and is looking forward to a still closer identity with the South.

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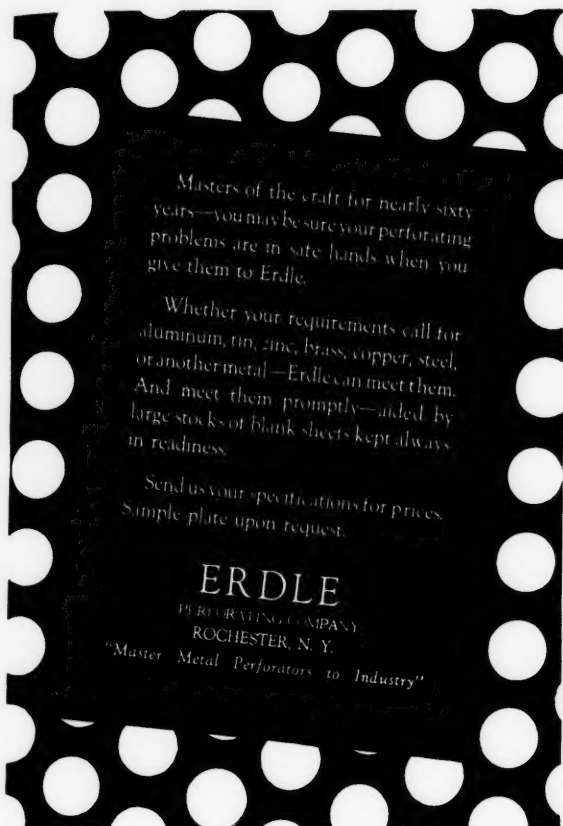
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The Wage and Hour Bill

(Continued from page 35)

operation a machine in our plant which, by the use of an electric eye, can do the work of these women. Today the cost of operation is about equal and in our effort to relieve unemployment, we have held our machine operation to a test basis. Should we be required to pay a minimum wage scale of 40c per hour for a 40 hour week, the difference in cost would be so great that we would be forced to adopt the machines throughout.

This example will be multiplied hundreds and thousands of times throughout the South. Perhaps the planners can figure out something else for them to do but right now I am worried in my mind (as my colored friends say) about what will happen to Jane and Sallie and Susie.

It seems to me if we could get everybody to work at fair wages that competition for their services would gradually cure the problem of substandard wages for all who are capable of being employed. I have been a little surprised that some planner has not suggested that the Wage and Hour Bill include the principle of "ploughing under" but perhaps they fear they would be included in the under third.

WALTER A. RICHARDS, Pres.

TOM HUSTON PEANUT COMPANY,
Columbus, Ga.

Cause More Unemployment

The contemplated Wage and Hour bill is evidently meant to help the low wage class. However, we believe it will tend to eliminate the inefficient class and cause more unemployment. The more efficient of any class earn more and we do not believe there is anything anywhere that will prevent them from getting more in the long run.

C. M. STEELE

J. C. STEELE & SONS,
Statesville, N. C.

Would Disrupt Business

There is, of course, no dispute about the desirability of improving the economic situation of all wage earners. There is, however, serious doubt that a wage and hour bill similar to the one presented to the last Congress will attain that objective. In fact, there is good reason to believe that the effect of such a measure would be a disruption of business and a consequent loss of income through the adjustment of wages and hours according to Governmental regulation rather than by economic requirement. Such a revolutionary change in our system would be but another experiment and, naturally, business is fearful of the result. To enable business to move forward in an orderly fashion consideration should be given to the removal of

the restrictions it now bears rather than to the addition of new ones.

A. J. HAZLETT, Pres.

EASTERN ROLLING MILL COMPANY,
Baltimore, Md.

Strongly Opposed To It

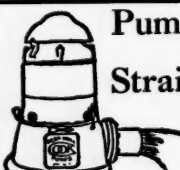
I am strongly opposed to the Wage and Hour bill because it is a long step in the wrong direction. It adds more power to the already over-centralized government in Washington.

If Washington has the power to tell industry what hours it shall work and what wages it shall pay to the lowest paid employee, then it is but a step farther to tell us what all wages shall be, what all salaries shall be, what products we shall manufacture and what quantity we shall turn out each day. I think it was Thomas Jefferson who said: "When Washington tells us when to sow and when to reap the people will go hungry."

Industry has made more progress and done more to raise the standard of living in the U. S., than politics, agriculture and religion combined. This is so generally conceded that it is hardly necessary to prove it. Industry has made this nation the greatest nation in the world. I am, therefore, unalterably opposed to turning it over to the politicians.

W. H. LOGAN, Pres.

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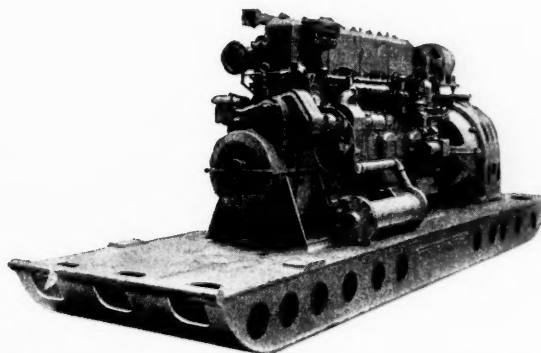
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The Present Situation of the Railroads

(Continued from page 33)

forms of taxation are being piled on them by every national, state and local taxing power. The tax bill of the roads now amounts to about a million dollars a day, and it is steadily increasing as social security and other new taxes are imposed. The August, 1937, tax bill was 5.9 per cent greater than the August, 1936, bill.

The railroads of the country are facing financial difficulties. Class 1 roads in August, this year, showed a decrease of 22.2 per cent in net railway operating income as compared with August, 1936. This decrease was due to rising costs of operation, which include increased cost of material, supplies, and fuel, and also a higher wage rate. This decline in net railway operating income for August is also a reflection of the trend in freight car loadings for the last six months of 1937. During the first six months of the year, car loadings were 14 per cent above the same period of 1936. The increase during the third quarter of 1937 was only 5.4 per cent over last year. The estimates for the final quarter of this year indicate an increase of only 6 per cent over last year.

Of equal seriousness is the legislative situation which the carriers face at this time. No legislation, state or national should be permitted that will increase the



Upper room in new 2 car-Pullman with short stair from car floor level

cost of railroad operation without increasing their efficiency, economy or safety in operation. Yet, there are now pending in Congress bills which would increase the cost of railway operations by three-quarters of a billion dollars a year on the basis of 1930 traffic. These measures include the Train Limit Bill, the Excess Crew Bill and the Six-Hour Day Bill. They would add a burden to railway operating costs greater than the total revenue of the railroads for the transportation of passengers, express and mail combined, and more than twice as great as their combined federal, state and local taxes.

The question now before the traveling and shipping public is—Will the railroads be able to continue as private enterprises?

Dr. C. S. Duncan, economist of the Association of American Railroads, recently presented the answer. He said:

As the situation stands this day, railroads are headed directly, inexorably toward government ownership. Private credit cannot withstand the encroachment of public credit. Private capital secured on the basis of earning power cannot long maintain the unequal struggle with public funds derived from taxing power.

If this strong tide to this shore, whether rocky or a safe and secure haven, is stemmed at all it will be by the force of public opinion deriving from business and business alone. The earning power of these properties must be protected if private enterprise continues. Given a fair chance, it can continue. If you want government ownership, you can have it. If you remain apathetic, you will get it. If you continue to support policies, for temporary or seeming advantage, without thought of consequence, which lead inevitably thither, then, of course, it will come. You will decide.

There are many signs today that the public is awakening to the fact that America's privately-operated, self-sustaining railroads are vitally necessary to the welfare of the people; that they are enterprising, progressive and competently managed. They ask only for fair and equitable treatment along with other transportation agencies, a sympathetic interest in their problems, and public confidence in their ability to do the job they have set out to do. Remove the threat of restrictive legislation and the threat to railroad credit in the form of public subsidies to their competitors and they will steam ahead with the throttle wide open.



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A well-balanced presentation of the latest improvements in modern heating, ventilating and air conditioning will be at your command for five days of profitable study when the Fifth International Heating and Ventilating—Air Conditioning—Exposition opens, January 24th in the Grand Central Palace.

Exhibits of outstanding value to you and your associates will mark this exposition as one of the most important events of the year. Many interesting and educational demonstrations of the latest equipment available for summer and winter air conditioning will be offered—new and improved heating and ventilating systems will be on display.

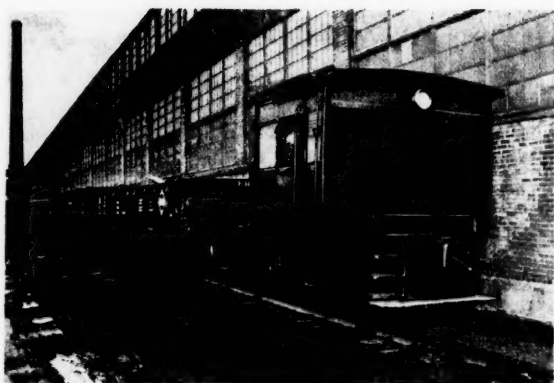
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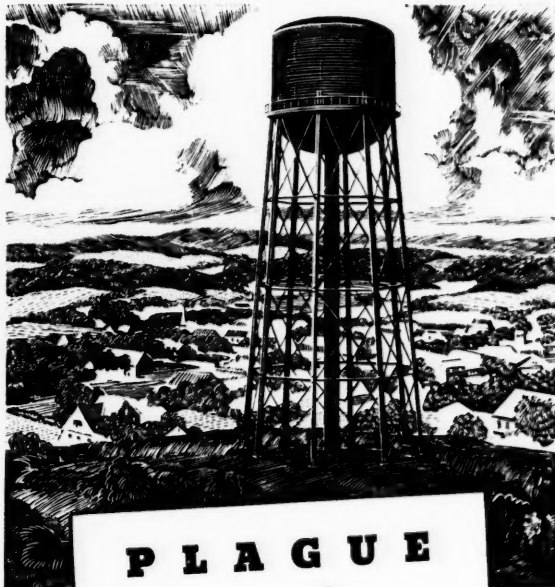
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Plagues seldom terrorize communities and cities nowadays. Health authorities everywhere have long since recognized the true value of water chlorination in relation to plagues. Modern water purification plants in charge of competent engineers, chemists and water-works men are standard equipment of nearly every state, city or township in the country.

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Solvay Liquid Chlorine shipments are now routed from Syracuse, New York, and Hopewell, Virginia. Upon announcement during the early part of 1938 shipments will be made from the new Baton Rouge, Louisiana, Liquid Chlorine plant. Your inquiries on Solvay Liquid Chlorine are cordially solicited. Write to your nearest branch office listed below or to

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LIQUID CHLORINE

The Freight Rate Question

(Continued from page 39)

ally, and on other materials about \$18,000,000 more than they would have paid based on the prices prevailing in the early part of 1933. These increased costs, based on volume of business recently done, will aggregate approximately \$83,000,000 per annum. Against this they will be relieved under the Railroad Retirement Act of about \$2,000,000 annually in pensions.

I have referred to the fact that the net railway operating income for 1936 (the best year since 1930) was \$80,000,000, of which \$14,500,000 came from the emergency charges, which have expired. It can easily be seen that the Southern Group will be unable to pay these greatly increased expenses and yet meet the interest on their funded debt (much less pay any amount to stockholders) unless some way is found to increase their revenues. Thus the Southern Roads are in the anomalous position of facing an attack upon the level of their freight rates generally, merely on the ground that they are higher than the Northern or Eastern sections, at a time when they are faced with the mounting costs in operating expenses.

There has been filed with the Interstate Commerce Commission two complaints, one against the present level of all the rates within the South and the

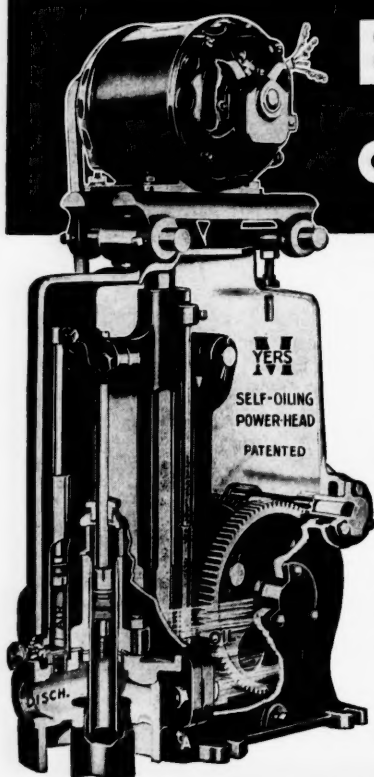
other demanding a lowering of rates on manufactured articles produced in the South and shipped into the Northern and Eastern sections.

I will speak first of the second complaint: The particular demand is that rates on these items of commerce be established on the same level of freight rates, mile for mile, as prevails in the North and East. The position of the Southern carriers, not only at the moment but in the past, has been that they will propose and urge reductions that may be shown to be necessary to successfully move freight into the destination territory mentioned. They have been successful in a number of instances in procuring the concurrence of the Northern lines in rates as low or even lower than the destination level. The Interstate Commerce Commission in some cases before it has ordered into effect rates equal to the Northern level or slightly higher, as the facts seemed to have justified.

The commercial necessity for a given level of rates that will be low enough to successfully move traffic is obviously in the interest of the railroads, and for this reason, if for none other, the Southern carriers may be relied upon to use every effort to procure such adjustments of freight rates on manufactured articles, as well as on raw materials, as will successfully place these articles of commerce into the highly competitive territory north of the Ohio and Potomac rivers.

The other complaint deals with the whole level of the intra-territorial rate structure of the South as well as the interterritorial level between the North and the South. At present, in a very substan-

tial way, both the territorial and interterritorial structures are on the same level, except that, as above stated, various rates on finished articles and raw materials are lower than that level. The class rates under this structure are higher than the corresponding rates in the North and East, but both structures have at least the presumption of reasonableness inasmuch as they were fixed by the Interstate Commerce Commission after exhaustive hearings. These class rates are applicable on merchandise and manufactured goods and contribute substantial revenue; they move, however, only a minor part of the total volume of traffic. On a great proportion of the territorial traffic within the South the rates are on a lower relative level than in the case of the class rates; in fact, many commodities in the South move on a lesser scale of rates than they do within the North. The interest of the railroads is necessarily devoted to the successful movement of traffic, and this has warranted the Southern Group of lines reducing below the normal level a great many rates. They do not believe that, on the whole, the present rate structure as applied to all commodities is too high. They are unable to perceive where the interest of the South will be progressed by further reductions for the purpose of bringing those rates which happen to be higher in the South than in the North to more nearly the Northern level, nor do they see that such reductions will move an appreciable added volume of traffic. Such being the case, they know that they cannot afford to reduce rates simply because, from a theoretical or comparative standpoint, some of the rates happen to be higher in the South than in the other sections under discussion.



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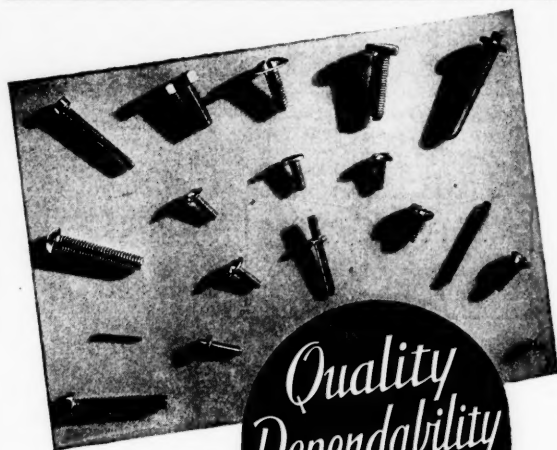
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The Frisco Railway and Oil

(Continued from page 64)

main the geographical center of the nation's oil production. An estimate made in 1935 by the American Petroleum Institute seems to indicate that it will.

Reserves were listed as follows: Mi-Continent area, 6,255 million barrels; California, 3,500 million barrels; Gulf Coast, 1,695 million barrels; Eastern, 455 million barrels; and Rocky Mountain area, 322 million barrels.

In the future, as they have been in the past, many of the by-products of this ocean of oil will be carried by rail to the seaports and inland market centers of the United States.

The diversity and number of crude oil by-products are amazing. Roughly speaking a standard, 42-gallon barrel of crude petroleum is broken down in the following manner after refining: 21 gallons of gasoline and naphtha; 4.2 gallons of kerosene; 2.1 gallons of lubricating oil; 0.2 gallons of wax; 1.5 gallons of wet gas; 10.9 gallons of fuel oil; and 2.1 gallons lost in the refining process.

It is often said no single industrial development, with the exception of printing, has brought such sweeping changes into the world as has petroleum. Its manifold uses are due not only to the variety and diversified character of its by-products, but to man's ingenuity in in-

venting mechanical devices whose operation depends on them.

Kerosene was the first satisfactory illuminant available to all, and it is still extensively used in rural sections. In 1859, the year Colonel Edwin L. Drake dug 69 and one-half feet to oil and fame near Titusville, Pa., approximately 40 patents for lamps, burners and similar appliances were taken out in this country. Since that first well the pace of petroleum's development has been swift.

You can't move about the streets without observing petroleum in its common applications, but some of its by-products are not so readily recognizable.

Of all the asphalt produced and consumed in the United States the largest amount is refined directly from petroleum. Asphaltic products are being used in greater quantities in the manufacture of roofing, and for waterproofing purposes; in the manufacture of wall-board, floorings, floor coverings, moisture-proof wrapping paper, paints, varnishes, enamels, anti-acid coatings, pipe dips, sealing compounds, insulating products, emulsions, molding compositions, and compounds involving rubber.

A rather recent development has been the preparation of petroleum as a medicine for internal use. A specially purified, tasteless, paraffin oil distillate is sold in quantities.

Solvents, creams, ointments, and pe-

troleum jelly are in common use and a series of alcohols—obtained by chemical treatment of certain of the products of refining, in which the nature of these products is greatly changed—enter the hospital and home; and they are used as solvents in the making of lacquers, soaps and essential oils.

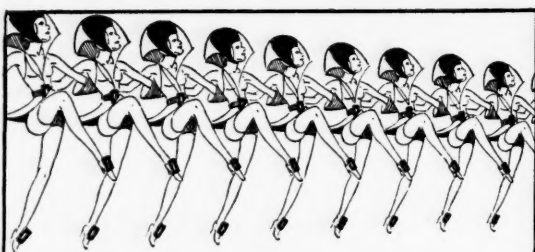
Commercial solvents are a by-product of the same naphthas that yield gasoline. Wax derived from petroleum has countless uses—in packing fruit and eggs, in making candles, in the laundry as a detergent and as an iron wax, in sealing fruit in jars. Saturating wax is applied to cardboard, matches and paper. It is used by etchers and for electric insulation. It is used in candy and chewing gum. Insecticides are petroleum products.

Coke, a petroleum product, is used for fuel, in the manufacture of carbon brushes and carbon electrodes, in making calcium carbide, electric light carbons, artists' crayons, fuel briquettes, graphite and battery carbons.

The base material for the explosive, trinitrotoluene (TNT), can be prepared from petroleum and there are fields in the mid-continent area producing oils particularly suitable for making this class of explosives.

Manufacture of synthetic compounds from petroleum is a field that hardly has

(Continued on page 78)



Co-ordination In Costume And Action Makes the Show!

A good chorus makes a good show, but what makes a good chorus? Uniformity or co-ordination in both costume and action!

An array of your packages on the counter or shelves of your dealers should be like a good chorus—uniform in color or design, appealing to the eye and compelling to the purse.

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Submitted by: Norman E. Diehl, Asst. Div. Purch. Agent., E. I. DuPont de Nemours & Co., Wilmington, Del.

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The Frisco Railway and Oil

(Continued from page 76)

been touched. An oil technologist predicted not long ago that the petroleum molecule may some day be the raw material for the manufacture of artificial sugar. Dyes have been made from petroleum residues, and there are actually present in crude oil, chemicals which are the foundation on which may be built numberless dyestuffs, medicines and perfumes.

The outlook for the future is limited only by your imagination. Oil production in the United States today is running around 500,000 barrels a day, approximately 16 percent ahead of the same period for 1936. Approximately 18 percent of this production has gone into storage. This year has been a record-breaking one in the demand for motor fuel, and statisticians expect a further increase of from 5.5 to 7.5 percent in 1938.

The mid-continent area will share in this increased production, and so will the carriers that serve it.

In view of the general agreement that the Southwest is the oil industry's own—that the reservoir of oil in this mid-continent area is virtually inexhaustible—it is not surprising that related industries more and more are locating in this part of the country.

Outlook for Cottonseed Oil and Cottonseed

(Continued from page 40)

more uniform and higher quality of butter, and in better salesmanship, they would probably have a market for more than is now produced in this country. At least, the cottonseed crushing industry has never depended upon legislation, or any other restrictive measures, against competing products in their great accomplishment of making cottonseed one of the great food fats of the world. This has been brought about wholly as a result of research and sales promotion sponsored chiefly by those who have developed this industry.

I refer to labor in the crushing plants, and not labor used in harvesting the crop. In certain sections like Mississippi and Arkansas, where the yields have been unusually heavy, farmers are having difficulty in securing enough labor to harvest the crop. This, together

with frequent rains throughout the Valley, will extend the harvest season.

Exports of cottonseed cake are beginning to pick up, and at the present market price of this commodity, the industry may get back some of its export trade, which has gone into reverse during the last two or three years, since quite a lot of cottonseed cake and meal has been imported. It is too early yet to have any information as to whether or not there will be any export market for cottonseed oil. As it is doubtless known, large quantities have been imported during the last three years, and it is among the possibilities that the tendency will now turn the other way.

The October estimate of this year's cotton crop by the Department of Agriculture indicating an average yield of one-half bale to the acre is unprecedented in the history of cotton, within my memory. In view of this enormous yield per acre, the distribution of \$135,000,000 or more under the Government cotton loan plan, and the benefit pay-

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